THRILLING WONDER STORIES

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A THRILLING PUBLICATION

IN THIS ISSUE:

VIA JUPITER

A Complete Novel of the Secrets of Space

By EANDO BINDER

•

LUXURY LINER

A Novelet of Future Travel

By NELSON S. BOND

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(ALSO 7 SHADES OF BLACK, BROWN, TITIAN AND BLONDE)

New Creme Shampoo instantly imparts lovely black color to hair that is

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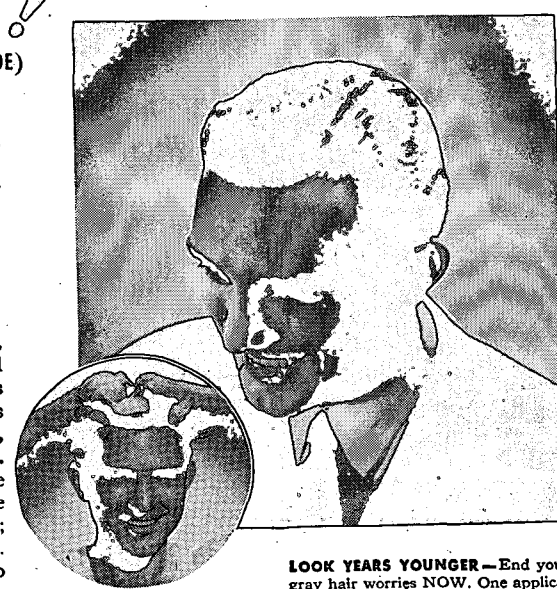
THIS remarkable new creme shampoo discovery, Tintz Creme Shampoo Hair Coloring, lathers and washes out dirt, grease and grime as it *instantly* gives hair a real smooth, Jet Black Tint that fairly glows with life and lustre. Don't put up with gray, faded, dull, burnt, streaked, off-color hair a minute longer. Tintz Creme Shampoo contains genuine Paraphenylene Diamine and is a real Instant Hair Coloring. The first application leaves your hair completely tinted; black, lovely, easy to manage. No waiting for results. Colors so smooth and even, experts find it difficult to detect. Won't hurt permanents. Now being specially introduced all over America by mail for only $1.00.



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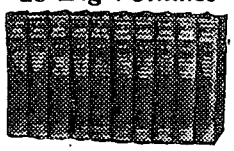

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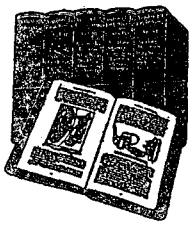

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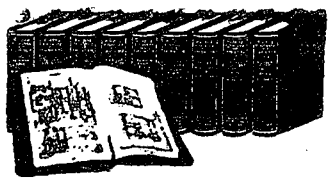

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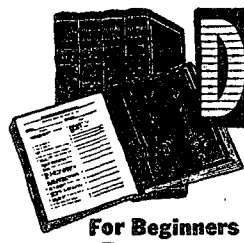

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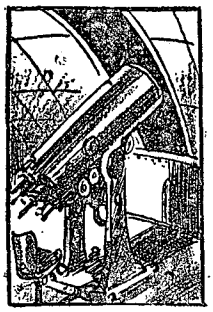
SCIENTIFICTION'S LEADING MAGAZINE

THRILLING WONDER STORIES

The Magazine of Prophetic Fiction

Vol. XXI, No. 3
February, 1942

Next Issue



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ON THE COVER: The cover painting by Rudolph Belarski depicts a scene from Oscar J. Friend's short story, THIS IS HELL.

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SIMPLE AS A-B-C

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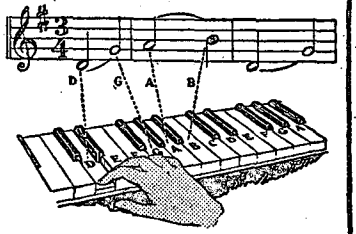

Strike the notes above and you'll be playing the melody of this famous waltz. Easy! Read what Mrs. *P. L. D., of California, says: "I am taking your cue for mother and child to learn together. I can hardly believe I can play the Merry Widow Waltz in two weeks."

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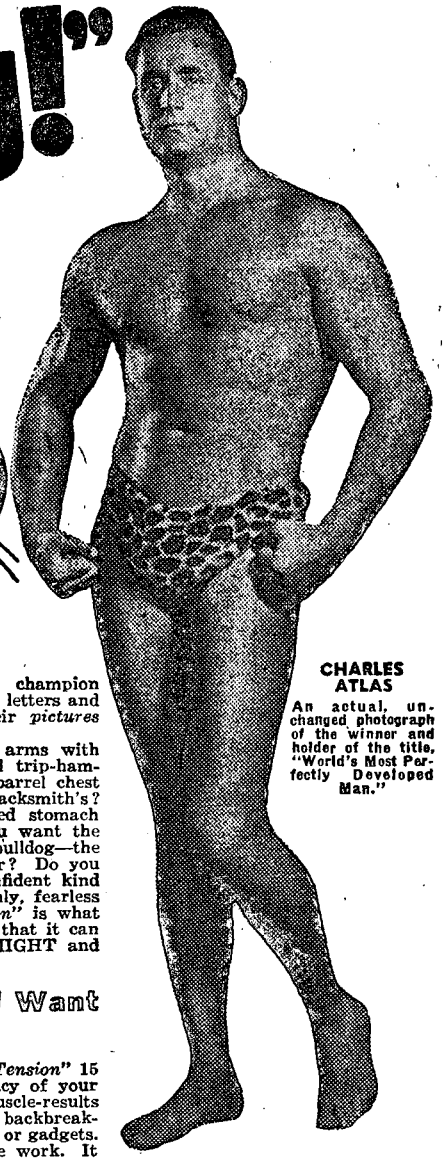
"Weakling!"

...that's what they called ME when I was only 97 pounds of skin and bones. NOW look at this build that won me the title, "The World's Most Perfectly Developed Man"



CHARLES ATLAS
An actual, unchanged photograph of the winner and holder of the title, "World's Most Perfectly Developed Man."

"I'll Prove that YOU, too, can be a NEW MAN!"
— Charles Atlas

"WEAKLING!" "*Sissy!*" "RUNT!" Those are just some of the names the gang used to call me. And believe me, they *hurt*. Those names hurt me more than any punches ever could. I used to wish they *would* hit me, instead of jeer and laugh at my skinny, no-muscle physique. But I deserved it, all right. Just 97 pounds of skin and bones! No strength, no stamina. I couldn't punch my way out of a paper bag. I was ashamed, embarrassed when I had to strip for gym or the beach. I felt HALF-ALIVE.

But I began to *study* my body—and then I made my amazing discovery of *"Dynamic Tension!"* And that's what made me a NEW MAN. It gave me the powerful body you see here! And it won for me the title, "World's Most Perfectly Developed Man!"

Only 15 Minutes a Day

I want to prove that *"Dynamic Tension"* (in 15 minutes a day, right in your own home) CAN MAKE YOU OVER into a man of giant strength and lasting energy. A confident, healthy, big-muscled HE-MAN! I can give you trigger-action muscles in your arms and legs and shoulders; set your whole body alive with robust, red-blooded health! What makes me so sure? Because I've seen my method of *"Dynamic Tension"* transform hundreds of puny weaklings—like I *used* to be—into champion SUPERMEN! I've got their letters and their measurements and their *pictures* in my files—and I know!

Do YOU want a pair of arms with the crushing power of steel trip-hammers—a surging, muscular barrel chest—shoulders like a brawny blacksmith's? Do you want a muscle-ridged stomach that can TAKE it? Do you want the tireless staying-power of a bulldog—the energy and pep of a terrier? Do you want the successful, self-confident kind of life that goes with a manly, fearless physique? *"Dynamic Tension"* is what you need! Let me PROVE that it can make you into a man of MIGHT and MUSCLE!

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Send For My FREE BOOK
"Everlasting Health and Strength"

If you mail the coupon right away, I'll send you a copy of my brand-new book, "Everlasting Health and Strength." It tells the story of *"Dynamic Tension"* in 48 pages of straight-from-the-shoulder, man-to-man talk, and over 75 actual pictures of myself and my pupils—fellows who became NEW MEN. My book worked wonders for them. See what it can do for you, RIGHT NOW. Remember, it's FREE. Mail the coupon TODAY. CHARLES ATLAS, Dept. 77P, 115 East 23rd St., New York, N. Y.

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I want the proof that your system of *"Dynamic Tension"* can help make me a New Man—give me a healthy, husky body and big muscle development. Send me your FREE book, "Everlasting Health and Strength."

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IN THE year 1887 an American journalist and author by the name of Edward Bellamy published a novel called *Looking Backward*. This book —one of the forerunners of the science fiction of today—presented the theme of a man accidentally carried three generations into the future through a hypnotic coma coupled with a bad fire which destroyed external evidence of his presence in the underground sleeping chamber.

A nice book of its type, and for its day—one that science fiction fans (Dad and Granddad) read with avidity and classed with that extravagant wild man, Jules Verne. But the point we want to make is that *Looking Backward* took the world of that future day, gave the reader a glimpse through the eyes of the somnolent hero, and compared the times with the past from whence the hero had come.

LOOKING INTO THE FUTURE

On the contrary, in this department, we want to take the present as we all know it and look forward into the future just a couple of generations and compare now with then! Many of us living today will live to see that not too far distant era which we will set at, say, the year 1980. Let's take a sane and conservative look at that period not forty years ahead and see what we may reasonably expect, as based on the actual facts of today.

Bear in mind that we are not cryptically prophesying up to the year 1999, like Nostradamus, but are basing our observations on such concrete foundations that even our sources of material overlap various features and articles now current in our trilogy of science fiction magazines.

In 1980 hermetically sealed planes will be propelled through the lower levels of the stratosphere at 1000 miles per hour by rocket motors, shrinking the circumnavigation of the globe to a single day's journey and bringing the most remote country to our very doorstep.

The modern airplane itself has become a giant powered wing of metal. All passenger, mail and express shipments now go by air. Instead of bus and trolley transportation for small town connections, lighter planes are used. Only freight goes by rail today.

JALOPPIES STILL RUN

Private travel is, surprisingly enough, still done by motor car as well as by private planes of helicopter design. Diesel motors have come into their own, giving speed, power and economy. Superchargers take care of car and rocket plane and passenger with equal ease, supplying atmosphere and air at sea-level pressure.

Highways span the several continents, built of new glassite materials and used only for pleasure car traffic. Buses and trucks have disappeared; freight has gone back to special railroads which also use diesel motors.

Metals have become better than ever, and glass is being used in bridge construction where the spans are not more than fifty feet.

Hydroponics, chemurgy and chemist have opened the cornucopia of plenty for all men so that a minimum of time and work suffices for comfortable existence. The age of plastics is here in full strength and beauty.

Cities have decentralized; each group of buildings of skyscraper units are surrounded by areas of parks and forests and gardens. The cost of living has not only gone down, but there is equitable world-wide trade. War has been outlawed by common sense and a more fairly balanced economic trading system that embraces the entire world on the principle of the greatest good for the greatest number.

There are still private homes out away from the community centers. These beautiful structures are no longer restricted by the size of trees and kinds of wood. Plastics have taken care of this.

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(Continued on page 10)

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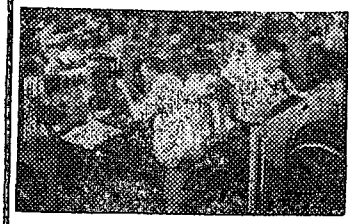

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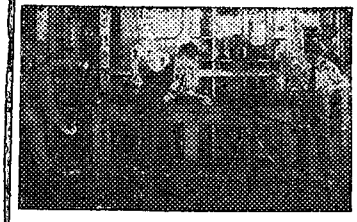

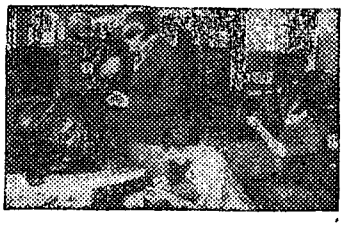

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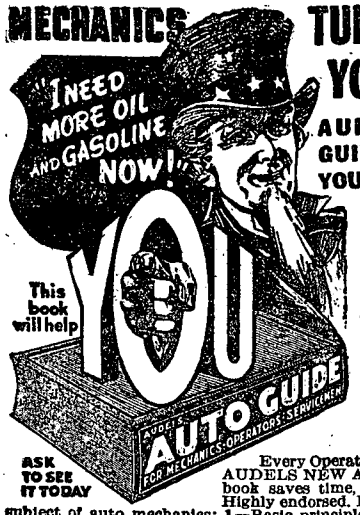

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LOOKING FORWARD

(Continued from page 8)

of the air, off the beam as it were, by special receiving instruments which are rented as the telephone used to be.

There have been great steps made in weather control, public health, education, eugenics, crime prevention and general welfare. The frontiers of civilization have become the front lines of science where man visions the complete conquest of disease, ugliness and atomic power—which last item will unlock the door to interplanetary exploration.

This, fellow men, is the picture of tomorrow—not the wild or wishful dream of the impractical visionary, but a sober and concrete expectancy based on discoveries and developments already around us now! It is up to us and our immediate children to bring these things to pass before the close of the twentieth century that scientifiction writers already pretend to think and write of as being old-fashioned and passé. Old-fashioned?

The heritage of a thousand inventive yesterdays lies just beyond the sunrise!

THE SCIENCE FICTION LEAGUE

In looking forward to the world of tomorrow, how about considering our League chapters of the future? We repeat special announcement we made last issue.

We want all SCIENCE FICTION LEAGUE chapters to report in, giving their names, numbers, dates of charter, present officers and current lists of membership. Do not procrastinate any longer! We are re-zoning the country and a new file is being geographically compiled. Address SCIENCE FICTION LEAGUE, 10 East 40th Street, New York City, N. Y.

Let's put some of that pep and life anent the SFL that you readers write in about into this department. Who knows what sort of schemes and games and science contests —and prizes we may yet shake out of this department? But you science fiction fans will have to help.

THE LEAGUE AND THE EMBLEM

To join the SFL right now as individuals, aspiring neophytes should fill out the coupon at the foot of this department—and mail it in with the name-strip of THRILLING WONDER STORIES. You'll want to be a member of this constantly growing organization when you learn how many and how nice are the chapters and clubs stemming from this parent organization.

Perhaps there is a chapter in your own home town, and you are overlooking many an hour of pleasure, entertainment, and instruction.

For those of you who want them (and this goes for old members, too, who don't have them) just include fifteen cents with the name-strip, and we'll send you the swellest gold-plated, blue and maroon SCIENCE FICTION LEAGUE button

(Continued on page 124)

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IF you're that man, here's something that will interest you.

Not a magic formula—not a get-rich-quick scheme—but something more substantial, more practical.

Of course, you need something more than just the desire to be an accountant. You've got to pay the price—be willing to study earnestly, thoroughly.

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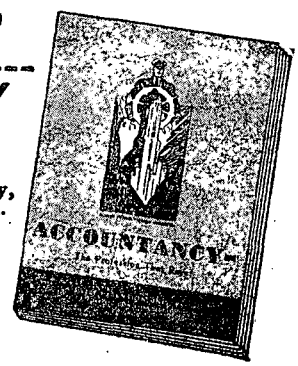

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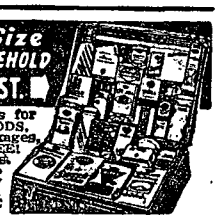

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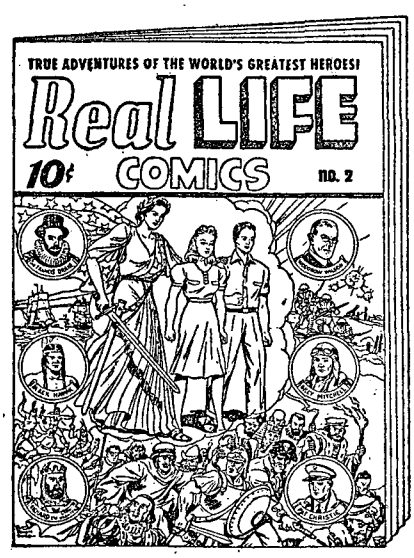

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BOOK REVIEW

SOMEONE IN THE DARK, by August Derleth. 335 pages. Price, $2.00. Arkham House, Sauk City, Wis., 1941.

AUGUST DERLETH is all things to all readers. To those in quest of regional novels, he is the noteworthy author of the Sac Prairie Saga. To lovers of verse, he is the author of many fine poems. And to those whose tastes lean toward the fantastic, futuristic and odd, he is one of today's supreme masters of the supernatural story.

SOMEONE IN THE DARK is a collection of those of Mr. Derleth's fanciful tales which he himself believes are worth preserving in hard covers. Perhaps Mr. Derleth has been too selective—for I remember several yarns of his, not in this volume, which should certainly have been included.

However, we must be grateful for what we have. I am glad Mr. Derleth has included "Joliper's Gift," and "A Gift for Uncle Herman," two tales which first appeared in one of the companion magazines to THRILLING WONDER STORIES. They are both outstanding, as are "Glory Hand," "Compliments of Spectro," "The Shuttered House," and "The Return of Hastur"—the latter, deriving its genesis from the work of H. P. Lovecraft, being perhaps the most interesting and significant story in the book.

These stories are enjoyable, but they are to be read one at a time and relished slowly, not galloped through. Mr. Derleth writes quietly and with restraint, in beautifully measured sentences that stick to the essentials of the story he has to tell.

His very restraint sometimes plays a trick on him—and makes his writing appear at times to lack fire. This fault is felt only occasionally, however. I recommend this book and predict that the mantle of Arthur Machen will some day fall on Mr. Derleth's competent young shoulders.

—A.S.

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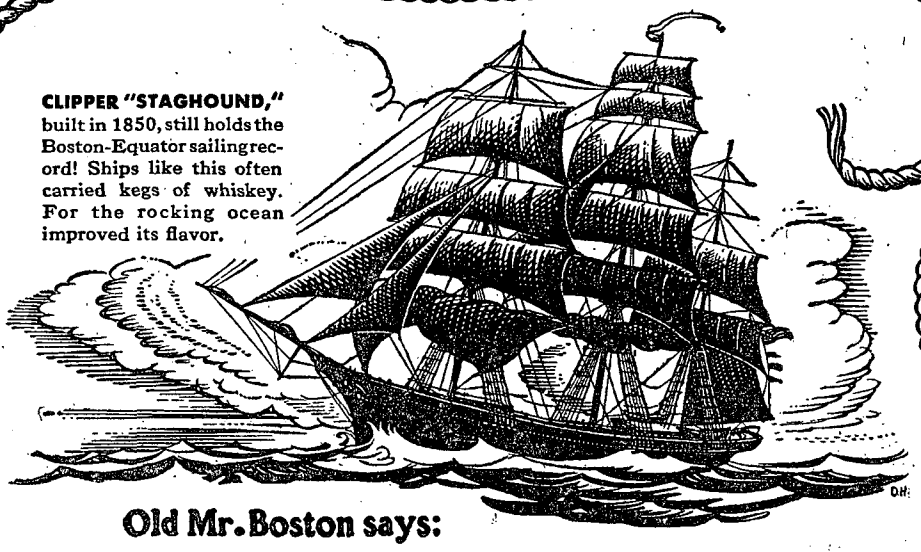

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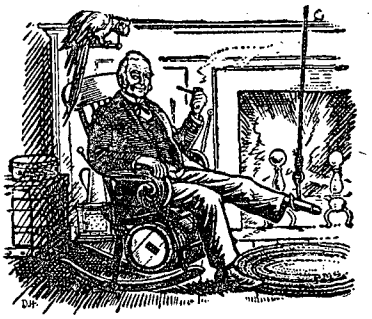

BACK HOME ON SHORE, those canny captains continued to "rock the keg"—beneath pine rockers. And from these famous "rocked" whiskeys comes our inspiration for Rocking Chair, with its almost-forgotten taste and richness!

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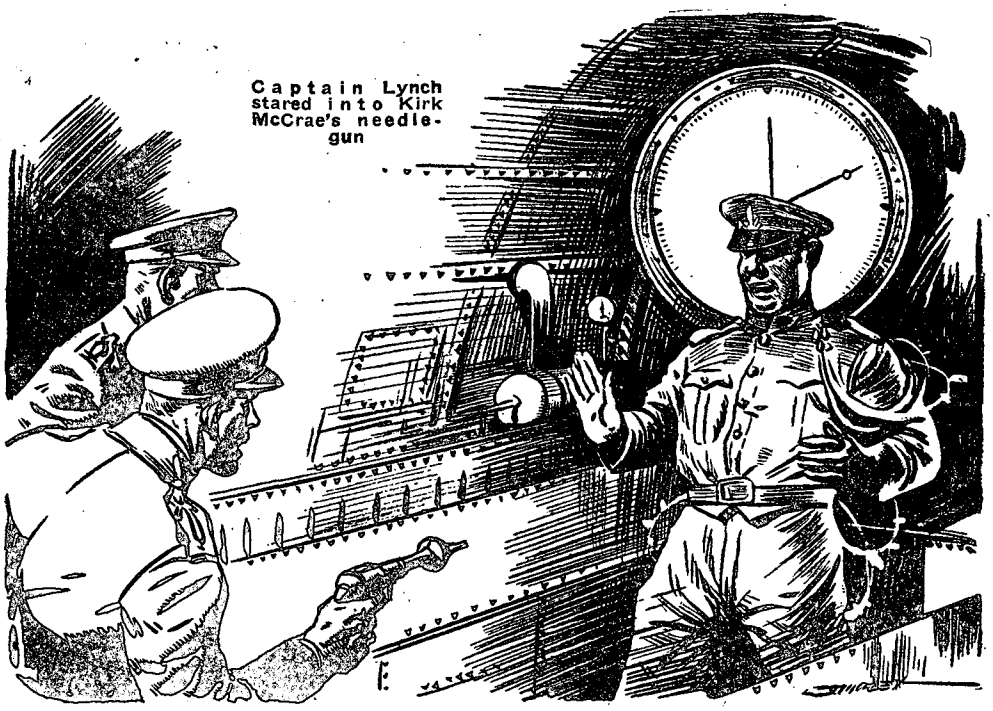

LUXURY LINER

By NELSON S. BOND

Author of "Parallel in Time," "Shall Stay These Couriers," etc.

When Captain Lynch Took Off From Earth on a Pleasure Cruise, He Didn't Bargain on Mutiny and Deadly Peril to Spoil the Fun!

CHAPTER I

On the Spot

THE ship's clock bonged twice unobtrusively. Which was, thought Lieutenant Kirk McCrae, first officer of the *Bluebell,* just the trouble around here. Every darned thing aboard this triple-blanked, pride-o'-the-fleet, super-extra de luxe luxury liner was either unobtrusive, upholstered or fattening!

"Grrmmph!" he said, glaring at the dial.

His fingers pressed lock-studs on the control banks before him. He lifted his six-foot frame out of the bucket-shaped pilot's seat and stalked, stiff-legged, to the chart-table. Space, mirrored in the turret visilens, was a flame-flecked pall. McCrae's mood, mirrored in his sultry eyes, was blacker still, and equally lighted with rebellious flares.

He tortured the keys of the mechanical log-recorder, scowled at the neat row of figures that popped out of its roller.

"Grrmmph!" he said again.

His sole companion on the bridge,

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Third Mate Johnny Arbogast, grinned up at him from behind the Calc desk.

"Matter, pal? Got the meemies?"

"So bad," growled McCrae, "I could holler. Blast it, Johnny, this trip's getting me down! Look at my hands!" He extended them.

"Soap?" Arbogast suggested.

"Nerves, you dope! I used to say I didn't have one in my carcass. But now I can feel them wriggling around in me like a skinful of hot angleworms! Next thing you know, they'll be measuring me for a strait-jacket."

"Notch," asked Arbogast interestedly, "or peak lapels?" He propped his feet on the desk, lighted a cigarette. "Why all the fuss, Kirk? This is an easy berth. Short hours, cozy quarters, good grub, and the sweetest, best-equipped spaceship that ever lifted gravs. What's the squawk?"

"You've just named it," fumed McCrae. "It's *too* darn soft. It's not the hours on duty I mind. It's the hours of leisure. Piddling around like somebody's pet pup with a mob of soft-pawed, wide-eyed Earthlubbers—"

"Comes," said Arbogast softly, "the dawn! In words of one syllable—it's not the heat, it's the humility? You don't burst into spasms of joy over our beloved passengers?"

"I'm a spaceman," glowered McCrae. "I'd a darn sight rather be running pirate patrol in the Belt or tending lightship off Pluto than striking poses for a crateful of amateur stereoptographers.

"And their blithering chatter! And the way I have to ooze goo at them! 'Yes, indeedy, Dr. Gotgelt, that huge, shiny thing out there is the sun.' 'Oh, no, Mrs. Richfish that's not a comet! It's a cosmic firefly on a bust'—*Bah!*"

Arbogast grinned consolingly.

"I see what you mean. They do get in your hair, don't they? But cheer up. We'll be home in another six weeks."

"In six more weeks," said McCrae bitterly, "I'll be in the paper-doll business."

He moved to the turret bulletin board, disdainfully fingered a gaudy sheet tacked thereon.

"'Enjoy three glorious months of Vagabondia,'" he read, "'on the luxury liner *Bluebell*, Pride of the Spaceways. See Luna, Venus, Mercury, Mars! Thrill to the Magic of the Universe. Beauty! Romance! Adventure! All for C2,9858—with meals!'"

"Three thousand credits!" sighed Arbogast. "Think of it. A year's wages!"

McCRAE gave a snort.

"Not to Mr. and Mrs. Moneybags! It's just another snip with the coupon scissors to them. Anyway, listen to what they get for their greenbacks.

"'Roam the Caverns of ancient Luna, home of a Vanished Race, under the protection of stalwart guides supplied (at a nominal fee) by the Luna Tours Co., Inc. Stroll through the lush jungles of Venus, thrilling to the spectacle of Mother Nature, working in a virgin laboratory to create new and strange life-forms—'"

"Hi-yah, Mom!" Arbogast snickered.

"'—and from the air-conditioned observation chambers of Mercury's famed Outpost, dare the flaming majesty of the sun. Gaze with awe upon its tempestuous prominences and see the unparalleled glory of the Corona—'"

"—and don't forget," added Johnny Arbogast, "to buy native pottery and souvenir postcards at Ye Olde Mercurian Trading Poste! Stop it, Kirk; you're breaking my heart. Maybe this trip *is* a dud, after all.

"So what? We can't quit in midflight. Anyhow—" He brightened. "All the passengers aren't dull, sickening clucks. There are a couple of neat-looking tabbies on board. That Lansing gal, for instance. *She's* no nuisance."

"Well, she's different," McCrae nodded grudgingly.

"Wrong again, pal. She's the same thing, only in a bubblier package. Anyhow, I thought you thought so—if you know what I mean. And Miss Wright? Old Man Preston's kid?"

"Phew!"

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"Not polite," reproved Arbogast, but accurate. Well, how about the tour nurse? Eileen O'Hara?"

"That red-headed snip?" McCrae flushed with sudden ire. "If there's anything I hate, it's an efficient woman!"

"Yeah?" Arbogast stared at him curiously. "I used to think you liked her. She's O.Q. for my bucks, Bud."

"Then you can have her! Furthermore," snarled Kirk McCrae with unreasonable vehemence, "I'll throw in practically everybody else aboard this plush-and-chromium space mangler! With the exception of yourself and

LIEUTENANT KIRK McCREA

Travers, the fourth officer, and Doc Bishop, and Sparks and Miss Lansing and—and maybe Chief Engineer McGinty, the rest can take a flying gallop through the air lock!

"Moreover, I include our windbag skipper and our Fancy-Dan second mate, Ronnie delMorgan. What's ailing you, chum? Got termites?"

Johnny Arbogast made no answer. His face was frozen into an impossible grimace, a smile half of greeting, half of warning. A finger at his side made jerking motions. A silence settled over the bridge; in that silence, McCrae turned slowly. And:

"Please proceed, Lieutenant!" puffed Captain Lynch. "Your conversation is *most* interesting!"

THE skipper of the *Bluebell* was a short man, but he looked somewhat taller now, standing as he was on his not inconsiderable dignity. His eyes were as frigidly genial as those of a deep-sea fish; his cheeks the approximate tint of a well-done lobster. Behind him, graceful and poised even in this embarassing moment, stood the debonair second mate, delMorgan.

His voice was smoothly and delicately vituperative.

"Well, McCrae! A fine example of professional courtesy! Discussing your superior officers behind their backs!"

"Officer," said McCrae. "Not 'officers.' I'm sorry, Captain Lynch. I shouldn't have said what I did. I guess I let my tongue run away with me. I apologize, sir."

"Apologize!" bridled the skipper. "Indeed you will! And explain, too. Before a meeting of the Board. As soon as we get home. 'Windbag', eh? We'll see who's a—but never mind! May I ask, Lieutenant, why you're not at the controls? Insubordination I can handle, but neglect of duty—"

"I finished my trick ten minutes ago, sir," Kirk McCrae said quietly. "I cannot be held responsible for the failure of my relief to take over."

"Mr. delMorgan," said the skipper, "was assisting me with—hrrumph!—passenger duties. Another department of official routine in which, I might add, sir, you have been noticeably deficient. As a matter of fact, Mr. McCrae, I've seen very little in either your performance of duties or your attitude to warrant your holding the brevet of first officer of this ship! Windbag! Windbag, indeed!"

"I repeat my apology, sir—" McCrae began.

"Silence, please!" Lynch fondled his soft, pinkish jowls, pondering. He thought aloud and ominously. "I *could* lift your rocket, Lieutenant, for mutinous criticism of your captain. Or it is within my power to confine you to quarters. But—"

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He looked up, nodding, decision in his eyes.

"But I am minded to overlook the whole incident."

"Thank you, sir! It is very generous of you—"

"A moment, sir! I shall overlook the whole, unhappy incident—on one condition! That from now on, there shall be a marked change in your attitude toward those on whom we of the Fleet are dependent. In short, sir—our passengers!"

Kirk McCrae swallowed his grimace.

"Very good, sir. I will do everything within my power—"

"And to further this aim," purred the skipper, "you are hereby removed from active bridge duties until further notice—and are assigned to the post of special guide!"

"G-guide!" McCrae strangled on the word. And stared at his captain agonizedly. "But, Skipper, I can't—"

"Of course," persisted Captain Lynch, "if you should refuse to assume this post, I should be forced to consider your refusal final proof of your insubordination, and—I beg pardon?"

"N-nothing, sir," McCrae gulped.

"So? Well, then, your duties begin immediately. I have long felt that the regular guide, Mr. Masterson, is too deeply burdened with details. Tomorrow, when we cradle at Mars Central, you will work with him. Make necessary arrangements for trips, accommodations and so forth. I believe some of our guests wish to make the side-shuttle journey to Phobos.

"'Five wonder-filled hours on the solar system's oddest satellite.' You remember, Lieutenant?"

"Ugh!" said McCrae.

CAPTAIN Lynch eyed him balefully.

"Still others are planning the overnight camel trip to Grand Oasis. And I understand one small party wishes to view the marvels of Erosion Natural Park. Of course, you are not expected to be in all these places at once. But you will prepare the schedules, see to it that the passengers are well provided for, happy, comfortable, pleasantly entertained."

"I—I—" began McCrae wildly.

It was on the tip of his tongue to bid the Old Man go chase Ampies up a rocket-jet. Then sudden understanding seized him. Lynch was not loading this onerous task on him purposelessly. Lynch realized that no Advisory Board would "break" a spaceman merely because he had criticized a superior.

He also knew that by reporting McCrae for such a trifle, he would expose himself to ridicule.

Nor could the skipper "throw the book" at his first mate without subjecting his own bridge generalship to close scrutiny. He was, therefore, making deliberate effort to corral Kirk McCrae's goat, hoping McCrae would blow up and commit some open breach of discipline.

But this, thought McCrae with sudden determination, was just what he would *not* do! Captain Lynch was caught in a mesh of his own devising. If Kirk McCrae assumed this job, performed it satisfactorily, the captain was bound by his own terms to forget his recent gripe.

McCrae's record would remain spotless.

"You were saying—" prompted Lynch hopefully.

FIRST Officer Kirk McCrae squared his shoulders.

"Nothing, sir. I just said, 'Aye!' Aye, *aye*, sir!"

Johnny Arbogast's breath escaped in a heartfelt sigh of relief. Lieutenant delMorgan sniffed insolently. Lynch's pudgy hands toyed fretfully with the gold braid that was on his jacket front.

"Very well, McCrae. You will assume your duties at once. The passengers await entertainment. Go below and start a game of—of deck tennis, or something."

"Very good, sir!" said McCrae quietly. And he left the bridge. He had gained, he felt, a moral victory. But at what price?

He hardly knew whether to grin or groan!

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McCrae blasted the crawler with his needle-gun

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CHAPTER II

Fool's Play

TWENTY-FOUR hours later, Kirk McCrae was no longer in doubt. Face contorted in a meaningless smile, he stood beside Heyward Masterson, the official tour conductor, helping the passengers descend the ladder ramp from the moored *Bluebell* to the sandy soil of Mars Central Spaceport.

One by one the members of the cruise party emerged. They were an oddly assorted lot. First, Dr. and Mrs. Raymond Tomlinson, a silver-haired couple in their sixties. Second honeymooners; eager, excited, volubly interested in every new sight. If all tourists were like this grand old pair, McCrae decided, this might not be such a filthy job.

But they weren't. The next pair to come down were the T. Frazier Joneses. She, looking disdainful and bored; he, looking sulky and—as usual—more than half drunk.

Next came the Wrights: old J. Preston himself, vice-president of the Fleet, crabbed, testy, demanding; his meek-and-mousy wife; their daughter, Susan, ash-blond and beautiful in a vacuous, beauty-parlorish sort of way.

"A cultured pearl," muttered McCrae, "with adenoids."

"What's that, young man?" snarled Old Man Preston.

"Nothing, sir," said McCrae stolidly. "Careful, sir. Watch the step, sir."

They passed on. A cool, amused voice spun the young lieutenant around.

"You'd better watch your step, Lieutenant. You mutter much too loudly, you know."

"Oh, you?" McCrae grunted. "Go peddle your pills, redhead!"

"That's the nice part of being a tour nurse," Eileen O'Hara laughed. "I don't peddle 'em; I give 'em away. What will you have? A headache tablet? I think you could use one."

"A truckload," McCrae growled, "if you're going to hang around here. Beat it, won't you? I'm very busy!"

He leaped forward suddenly.

"Ah, good morning, Miss Lansing! Sleep well? Lovely day, isn't it? Watch the step."

Gloria Lansing posed briefly, tellingly, at the ramp top, touched a faultless coiffure with scarlet-tipped fingers, and made a great occasion of inhaling her first breath of the thin, cool Martian air. She wore a desert sunsuit conceived by an expensive Earth *couturière*. Abbreviated shorts and a low-necked, diaphanous sports shirt made little pretense at concealing her breath-taking charms.

Across the space port a cargo crew stopped working; one uninhibited male animal signified enthusiasm in a low, appreciative whistle. Kirk McCrae frowned and flushed, but Gloria Lansing smiled. Her voice was the chiming of old crystal.

"Lovely, Lieutenant? Marvelous, r a t h e r! Glorious! Ah — Mars! Earth's gorgeous sister planet. What beauty—what charm—what promise of adventure and romance!"

Her long-lashed eyes met McCrae's briefly, dizzyingly; then she passed on. Behind McCrae sounded an unladylike snort.

"What ham acting!" gurgled Eileen O'Hara. "And what m a l a r k e y! 'Earth's sister planet', your Aunt Isobel! What's happened to Venus? Gosh, I wish I had glamour!"

"I wish you had a bridle!" snapped McCrae. "You're envious, redhead. Why don't you run along somewhere and hide?"

"Sure I'm envious," acknowledged Eileen cheerfully. "Trouble with me is, I can't wear clothes like that. I blush, and look sunburned. As for running along—no can do, Lieutenant. I'm your personal leech. You and I are assigned to shepherd the flock to Phobos—or hadn't you heard?"

KIRK McCRAE stared. "You and I? Working together?"

"Mmm-hmm. Just one, big, happy murder method—no?"

"Yes," corrected McCrae. "O.Q., my delightful, brick-topped vial of poison. But I'm running this she-

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bang. And I don't want any comments, cracks or advice out of you, get it? I'm tired of efficient females. You go your way—"

"—and you'll make passes at the glorious Gloria," finished Eileen. "I get it." Her green eyes were taunting. "Oh, by the way—about those headache tablets—"

"I don't need any," said McCrae curtly. "Go 'way!"

"You don't," said Eileen, "but *I* do. 'Bye!"

The last passengers filed from the ship. Henderson, a Lunar utilities magnate, and his secretary, a wan-looking yes-man named Sanders. Dr. Charles Gruber, the biologist, and his wife. Miss Hester Priddy, an old-maid schoolteacher; a Mrs. Ormond Hearn, recently widowed and taking this cruise to forget her grief. Mrs. Lacey Trent-Weatherby, a three-time diplomatic corps widow, currently between mates.

A pair of younger men. Joe Chickering, who blithely called himself a professional ne'er-do-well, and a young musician, Rudy Galatzino. Pete O'Brien, plump, squat, cheerful and grateful to the forces of law and order that had closed his bucket-shop, sending him on this vacation.

Masterson, the head tour conductor, checked the last name, turned to McCrae.

"Now, Lieutenant, about this afternoon's trip—"

McCrae held up his hand.

"Was she telling the truth?" he demanded.

"Miss O'Hara? Why, yes. You see, a nurse is needed on the Phobos trip. Grav-nausea, you know. Phobos is tiny—"

"Draw me," McCrae interrupted caustically, "a diagram. So I'm elected to lead that expedition, eh? Well, all right. How many passengers are going along?"

"Well, let me see. Dr. and Mrs. Tomlinson, Miss Priddy, the Wrights, Mr. Chickering, Miss Lansing."

"Yeah?" McCrae's eyes lighted .

"And I believe Lieutenant delMorgan expressed his intention of making the trip also. There will be eleven altogether." Masterson coughed ingratiatingly. "I'm glad you're assisting me, Lieutenant. My job has been no easy one, trying to take care of everything. With you handling the Phobos party, I am free to spend my time with the overnight caravan."

"Think nothing of it."

"You will of course take every precaution for safety, Lieutenant. Phobos is an interesting satellite, but has its perils. The chasms, the lack of gravity, the—"

"—nurses," finished McCrae, "and pretty spacemen who tag along. O.Q. I'll bring 'em back alive. When do we go?"

"After lunch. The ferry will be at Number Nine Cradle. If I don't see you before you take off—good luck, Lieutenant!"

McCrae, watching Gloria Lansing disappear into the foyer of the Spaceport Inn, came to with a start.

"Huh? Oh, yeah—thanks!"

MISS Gloria Lansing was used to having her own way. She was not having it now. She didn't like the experience. A smile was on her lips, but sultriness clouded her eyes.

"Oh, now, Lieutenant!" she pleaded for the hundredth time. "Don't be a meanie! Just once? For a teeny minute?"

Kirk McCrae sighed. Things were not going exactly as he had planned. He had looked forward to this trip as a sort of five-hour chance of a lifetime, with the Lansing chick and himself in the starring rôles. It had not turned out so. He had been plagued, all during the ferry shuttle from Mars to Phobos, with innumerable queries cooked up by the tourist adventurers. Now that they were on the satellite, he was being pestered by every member of the party—including the gorgeous Gloria herself—to do things not permitted.

"I'm sorry, Miss Lansing," he said, "but it's absolutely forbidden. I realize that lead-soled walkers are a bore. But on this tiny moon, the gravitation is so slight that if you were to remove them you'd soar sky-

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ward every time you took a step."

The girl's ripe lips puckered into a bewitching pout.

"But I know, Lieutenant! That's just why I want to try it. I want to experience the lovely sensation of flight. To feel myself—" She spread her arms dramatically. "To lift like a bird in the violet sky—"

"No!" said McCrae curtly.

Miss Lansing glared at him witheringly and moved away. Lieutenant delMorgan, turning to follow her paused to look back.

"You didn't have to be so darned nasty about it!" he snapped.

"Beat it!" said McCrae wearily. "Go fall down a chasm, will you, camera-pan? And pull the hole in after you."

The second mate glared at him.

"I made the suggestion for your own good. Miss Lansing is a passenger, and entitled to every respect and courtesy. Captain Lynch will not be pleased to hear of your dictatorial attitude."

"And he'll hear," grunted McCrae, "as soon as you can chase home and tell him. You know, delMorgan, sometimes I'm tempted to lay an egg on that pretty puss of yours."

He took a half step forward. The other man backed off in swift alarm.

"Now, none of that, McCrae! Regulations forbid brawling between space officers!"

"What's all this, gentlemen?"

The crabbed snarl of J. Preston Wright interrupted the first pleasant moment Kirk McCrae had enjoyed for hours. Reluctantly McCrae watched delMorgan scuttle away after Gloria Lansing. Then he forced a smile.

"Just horseplay, sir. What can I do for you?"

"Horseplay, eh? Wright *hrrumphed!* scornfully. "Well, we'll have no more of it. Not while I'm a vice-president of the Fleet. Lieutenant, how much time have we left?"

McCrae glanced at his wrist-chronometer.

"Trifle less than an hour, sir."

"Then suppose you earn your keep by taking us on a little stroll across the plains, sir? We've looked at Mars through the telescopes, listened to an illustrated lecture on Phobian flora and fauna, and practically bought out a souvenir shop. But we haven't seen any of the 'romance and glamour' we were supposed to see here. Show us, Lieutenant!"

McCRAE was frank.

"There isn't much to show. After all, Phobos is only thirteen miles in diameter. It's pretty much the same everywhere you look."

"This side-trip, complained Wright, "cost ten credits!"

"I didn't write the folder, sir," McCrae reminded him.

"You're guiding the expedition. Now those ravines, for instance."

Wright pointed across the desolate Phobian plain to dark, scarred pits.

"Aren't they supposed to be one of the natural wonders? Couldn't we climb down?"

"Oh, no!" McCrae shook his head determinedly. "That won't do, sir. There are still crawlers on this satellite."

"Crawlers!" piped up Susan Wright, wide-eyed. "Oh, Papa, the monsters we saw in the stereo optographers! We must see them!"

"But they're dangerous, sir!" McCrae protested weakly. "And we've very little time left."

"Time enough," grunted Wright, "to walk to the head of the ravine. Lieutenant, are you going to fulfill your duty as an escort, or must I report to Captain Lynch that—"

"Very well, sir," McCrae sighed and surrendered. "I'll call the others. But when we reach the ravine, please move carefully. Dr. Tomlinson, Miss Priddy, Mr. Chickering—"

A few minutes later the members of the tourist party were trudging across the hard, cracked plain to the ravine. In lead-weighted walkers, it was an arduous trip. The line was a long, straggling one. McCrae was at its head. His attention was occupied with answering a new deluge of silly questions. That explains why he did not notice what was happening some yards to the rear.

Gloria Lansing had fallen behind

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the main body of the group. She was weary of the plodding pace. Moreover, she was angry. She was accustomed to having her own way. And McCrae's back was turned—

She glanced about her covertly. No one was looking. She dropped to one knee, unbuckled the straps of one walker, then the other. She rose to her feet tentatively, a feeling of giddy lightness suffusing her. Even the slightest movement lifted her to the balls of her feet. She essayed a step, felt her whole body rise and glide. It was a strange, wild, altogether pleasant sensation. If she were to leap, now, she would rise and skim like a bird.

"Look, everybody!" she cried aloud gaily. "Watch me!"

McCrae spun, startled. His eyes read the situation at a glance. The abandoned weights, the dramatic posture of the girl, the smooth tensing of her unencumbered limbs.

"Don't!" he roared. "Miss Lansing *—don't do it!"*

But even as he shouted—she leaped. Her laughter was gay, carefree. The Phobian lack of gravity had stripped her weight to a mere nothingness. Her leap carried her high over the heads of the group, like a flash of vibrant, colorful thistledown. Then, lightly, she began to fall.

It was then that her laughter ended abruptly in a scream. Her arms waved wildly; her limbs threshed the air in a vain attempt to find solidity. Too late she understood what McCrae had known and feared. Her leap had supplied too much impetus. She would not land beside her companions, but beyond them! In the depths of the dark ravine!

Once more and piercingly she screamed. Then she was over the rim, a whirling, tumbling, frightened girl. McCrae, plunging forward desperately, was just in time to see her plummet headlong to the rubble-strewn floor of the chasm.

"Miss Lansing!" he cried. "Gloria!"

There came no answer. Shock or fear or actual hurt had stilled her. She lay there at the bottom of the ravine limp, motionless.

CHAPTER III

Disaster

FOR a moment Kirk McCrae stared, grimly indecisive. Then his hands leaped to the lacings of his own boots. But even as they fought the rawhide, his eyes glimpsed movement in the shadows below. His hands stopped. He rose swiftly, barring the forward-pressing passage of the others.

"Back!" he cried. "Stay back! del-Morgan—quickly! Hop back to the depot for a rope. Hurry!"

The second officer stared at him.

"Rope? Are you insane? There's a quicker way to get her out of there than that!"

He bent, his hands tugging at his boot lacings. McCrae gripped his shoulder, spun him to his feet.

"Do as I say, delMorgan! Get rope! I'm going after her."

"When?" snarled delMorgan. "When you're satisfied she's learned her lesson? She's hurt, you idiot! She needs attention right now!"

He tugged himself free, kicked off his weighted boots—and before McCrae could stop him, had hurled himself over the brink after the girl!

Impotent with rage and apprehension, McCrae watched him float downward. His eyes swung to the group, seeking assistance.

"Chickering—" he began.

But Eileen O'Hara had already doffed her weights. Now the nurse said calmly, coolly.

"I'll get rope, Kirk. Go down. They'll need you. I'll do what's necessary—up here."

There was complete understanding in her level gaze. A nod, and she was gone, bounding toward the distant depot like a creature out of legend, shod in seven-league boots.

Then, and then only, was McCrae free to act. He too kicked off his weights. His fingers were fumbling for his holster as he threw himself into the ravine. His needle-gun was poised and ready a few instants later as he joined delMorgan and the girl

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on the narrow floor of the canyon.

The second mate had lifted the girl to his shoulders. A flush darkened his cheeks as McCrae dropped beside him.

"Get back, McCrae! We're getting out of here!"

"Stand still!" There was no heat in Kirk McCrae's voice. Just a cold and deadly warning, unmistakably definite. "One move and I'll burn you down, delMorgan!"

"You—you madman!" gasped delMorgan. "You'll lose your rocket for this! I'll see to it!"

But he did not move—which was what McCrae wanted. A move at this stage might prove fatal. Something at the other end of the ravine was creeping closer each moment! McCrae's eyes searched the semi-gloom, his gun poised and ready. To delMorgan he said,

"You know you couldn't jump out of here," he told delMorgan.

"What?"

"Sheer walls. A narrow opening. You could jump *up, yes*—but you'd fall right back. And with her in your arms, you'd be defenseless against—Back!"

His needle-gun spat as he shouted. delMorgan went stumbling hastily backward; the shot blazed past his falling body. He turned, and his eyes jolted open.

"A—a crawler!" he faltered.

"Mmm. Saw him from topside. Got a gun?"

"No," delMorgan quavered.

"Thought as much. Doesn't matter. They're almost impossible to kill, anyway. Silicoid carapace. Best we can do is stall him off till—Stand still, damn you!"

DELMORGAN'S mouth was loose-lipped with terror.

"I'm going to jump! I've got to get out of here!"

"You'll stay!" corrected Kirk McCrae grimly. "I'm not going to have you tumbling back into that thing's tonsils."

Again his gun spat flame toward the Phobian monstrosity, edging dangerously close. It was now so near that McCrae could see the details of its incredible structure. Long, prehensile snout protruding from a bullet-shaped head. A reptilian figure, eight-legged, squat, armour-plated, with an unearthly carapace composed of some silicoid material. Like a thinking, animated stone—lethal, indestructible.

Only the flame of McCrae's needle-gun held the crawler back. Its nervous organization was so obscure that it did not feel pain, but it recognized danger in the molten fusion of its parts.

It could not be held back for long. Sooner or later its weak, beast brain would realize it was not seriously menaced by this hot, red torrent. Then it would close upon its prey inexorably.

McCrae glanced anxiously aloft. Faces rimmed the ledge, cries reached his ears thinly. And then—a tawny, snakelike length came slithering down the sheer wall. The rope! McCrae breathed a sigh of thanksgiving.

"Loop it around you, quick!" he snapped at delMorgan. "Then jump!"

He turned his face upward, cupped his hands and bawled:

"Pull when they reach ground level! Got it?"

The figure at the other end of the rope nodded. DelMorgan had flung a bowline about his waist. Gloria Lansing still lay in his arms.

"N-now?" he quavered.

"Now!" barked McCrae.

The other man leaped. As McCrae had said, he shot up straight, his line of flight paralleling the walls of the ravine. Against the light gravity he easily cleared the rim.

Without the rope, he would have fallen back into the hole again. But as it was, there were eager arms waiting to tug on the rope the instant he and his unconscious burden had cleared the edge. One pull—and they were safe.

McCrae watched them disappear, then turned to find the crawler had writhed still closer. Again he had the satisfaction of bathing it in a fiery blast of his needle-gun, seeing one sandy limb melt like leadfoil and puddle across the rocky soil. The craw-

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ler lurched blindly, but stumbled on.

Then the rope came tumbling down again. Kirk McCrae wrapped the loop about him and leaped.

THAT was that. Except for one last little detail which clamored for attention. Reaching the surface, McCrae strode to the side of delMorgan, now anxiously bent over the recumbent Gloria. He spun his fellow officer about.

"She all right?"

"I think so. Stunned, but not injured."

"Good! Then—get 'em up!"

"W-what?" delMorgan stared at him dazedly.

"We," said Kirk McCrae coldly, "have a couple of matters to settle. Disobedience to a superior officer in time of stress, for one thing. Incompetence, and failure in line of duty. Or maybe I'm doing this just for the hell of it. Get ready!"

"See here, McCrae!" blustered delMorgan. "You can't bulldoze me! I won't participate in any vulgar brawl."

"So?" McCrae looked at him speculatively. "You won't defend yourself, eh?"

"Certainly not. And furthermore—"

"O.Q.," sighed McCrae. "I warned you. Here I come—ready or not!"

He swung. Just once. It was enough. It was neat and clean and accurate. delMorgan collapsed into heavy slumber.

Not that the incident was closed, by any means.

At least, thought McCrae gloomily, that was one pleasant recollection to bear with him into durance vile.

For the hundredth time that day, he rose from his cot and paced the floor of his narrow cabin. He snapped on his wall radio, snapped it off again impatiently as the annoying strains of swoop music blared from it. He picked up, leafed fretfully through, and discarded a book. He chafed.

A week had passed since the little fracas on Phobos. A week which might have been seven days of "glamour, romance and thrill-packed adventure" to the tourists of the luxury liner *Bluebell,* but which certainly had been, for Space Officer Kirk McCrae, two hundred odd hours of boredom.

Lieutenant McCrae was confined to quarters, charged with violation of practically every regulation in the code-book.

In the past week the *Bluebell* party had completed its allotted three-day stay on Mars. Now, all jets flaring, the luxury liner was en route back to Earth. In a few more days it would cradle at Long Island Spaceport. The passengers would depart, returning to their various homes to brag about the marvels they had seen—and Kirk McCrae would appear before a drumhead court martial to answer for his alleged sins.

"So," thought McCrae savagely, "the hell with them! I can get another job. International Strato always needs men. I'd rather do an Earth hop than—"

Which was brave talk, but untrue. Kirk McCrae was a spaceman. No Earth berth would ever satisfy his deep love for flight among the ebon depths of the void.

A knock sounded on the door. McCrae glanced curiously at his wrist-chronometer. Not lunchtime yet. Then who—

It was Johnny Arbogast. A strangely unsmiling Arbogast whose eyes became even more sympathetic as, roving about the cabin, they noted the overflowing ashtrays, the sprawling magazines, the manifold evidences of his friend's discontent.

"Hi!" said Arbogast.

"Are you real, or a touch of indigestion?" McCrae grunted.

"I'm sorry, Kirk," Arbogast said embarrassedly. "But I couldn't come before. The Old Man wouldn't let me."

McCRAE swept a chair clear by the simple expedient of dumping its contents to the floor. He shoved it at his guest.

"Sit down, chum—and talk. Don't mind me if I seem a trifle spellbound. It's been so long since I've seen anyone but the messboy— Oh, skip that! What's the news? Has the Old Man

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finally decided I did the right thing?"

"The answer," Johnny Arbogast said, "is 'no.'" He sat down. "The current story is that after browbeating the tour party into misery all afternoon, you climaxed the affair by refusing to go to Miss Lansing's rescue until delMorgan forced you into it. You then wound up an inglorious interlude by viciously attacking the gallant Sir Ronald delMorgan.

"Oh, don't look at me like that! *I* don't believe it. But that's what they're saying. That's why I finally wangled permission to come and see you. I figured there'd be another angle."

"There," snorted McCrae, "is. Listen." He gave out. It was the same story, but it sounded different. "So then," he concluded, "I let him have it. Maybe it *is* against regulations, but I was so blasted mad—"

"You should have hit him twice," commented Arbogast. "Once for me."

"Once," said McCrae, "was enough. But look, how about the passengers? They saw it all happen. Didn't Captain Lynch investigate? Didn't they explain about—"

Arbogast shook his head.

"Earthlubbers, chum. They wouldn't recognize a crisis if they met it at high noon. Miss Priddy and Chickering never did understand what it was all about. And J. Preston Wright clinched the case against you. Claimed you were surly all day, and declared that delMorgan's nitwit nosedive into the ditch was, quote, 'The most valorous exhibition of spacemanship I have ever witnessed, egad!' unquote."

"Wright's a fool!" groaned McCrae. "But surely they knew the crawler was dangerous?"

"The crawler," Johnny Arbogast reminded him gently, "was in the shadows, Kirk. It wasn't visible from topside."

"But Miss Lansing! She—"

"Come out of it, keed. La Belle Lansing was fast asleep throughout the interlude. All she knows is that you were a nasty man, and that when she came to, Ronnie delMorgan was Her Hero. Only one person went to bat for you. Eileen. And the skipper developed a deaf ear when she tried to talk."

Kirk McCrae cracked his knuckles angrily.

"But delMorgan knows!" he gritted. "I'll knock the truth out of him!"

"Wishful thinking, pal. You can't knock out what's not in. He's allergic to truth."

Arbogast stared at McCrae sympathetically.

"Kirk, those two are going to bust you out of the Service, or else. I'll stick by; most of the command will. But Lynch, after all, is the skipper. He carries lots of weight. And with delMorgan to back him up—"

"You keep out of this," growled McCrae. "I'm not going to let you get messed up just because I'm on the spot. So they're going to bust me, eh? Wait! If I don't prove I'm in the clear, I hope to crack up on an asteroid. I hope—"

It was at that moment there came a violent, wrenching crash. The ship's lights flickered, dimmed. Concussion trembled the flooring beneath the two men. McCrae's chair jammed tight against the forward wall, and Johnny Arbogast pitched from his seat to skid scrambling across the floor.

Books tumbled from their cases, a pitcher crashed from the table into a thousand bits, the groan of tortured metal shuddered about them. A cascade of sound dinned in their ears.

And over and above the tumult came the frenzied rasp of the ship's intercommunication system. The strained voice of Captain Lynch, bawling orders from the control turret.

"Emergency posts! All hands—emergency posts!"

CHAPTER IV

In Deadly Peril

JOHNNY ARBOGAST picked himself up off the floor. A hurt look was in his eyes.

"Now see what you've done!" he told McCrae. "That's a devil of a thing to wish!"

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But Kirk McCrae was halfway to the door. His voice roared back over his shoulder.

"We've cracked up! Come on!"

They hurried from the cabin.

The control turret was a scene of chaos. Delicate instruments had slid from their niches to litter the floor. The shock of the crash had broken the log-recorder from its moorings and smashed it into the emergency control bank. An excited mob of passengers, in violation of every order, had jammed forward seeking an explanation.

Their clamoring so drowned all other sounds that Kirk McCrae did not realize for some minutes that a familiar drone was missing—the subdued, steady hum of the hypatomic motors which drove the ship.

Captain Lynch was at his wit's end attempting to quiet the tumult, force the passengers from the turret, draw some modicum of order out of chaos. Ensign Tommy Travers was at the control banks doing nothing—for there was nothing to be done now, with the motors stilled. DelMorgan was going through lots of emotions which, so far as McCrae could see, meant nothing.

He glanced at Johnny Arbogast, and Arbogast nodded. Together, working swiftly, smoothly, capably, they succeeded in clearing the turret. Most passengers, when assured that "everything was perfectly all right", allowed themselves to be herded away. Finally there remained but one ununiformed person in the turret—old J. Preston Wright. Him they could not budge, standing, as he was, on his authority as vice-president of the Fleet.

It was then that, for the first time, they learned what had happened. McCrae strode to the forward visiplate, snapped it on, and looked not upon open space—but upon the raw, boulder-strewn surface of a planetoid!

The lens also brought into view the *Bluebell's* prow. It looked like an accordion. The ship had crashed almost nose on, managing to pull up at the last moment, preventing head-on impact, but crumpling the prow wickedly. The fore under-carriage had been scraped off as the ship bounced to a halt on the rocky terrain.

Ensign Travers flushed miserably under McCrae's curious eyes.

"I couldn't help it, Mr. McCrae. I saw it coming. The automatics warned, and I shoved on the deflectors. But they wouldn't take hold. At the last moment I did the only thing I could think of: lifted the nose and shot two blasts through the left jets to break the crash."

"That's all you could do," said McCrae, "if the deflectors wouldn't work. But why wouldn't they? They were in O.Q. condition at the last report. Captain Lynch—"

Lynch was glaring at him angrily. He didn't answer McCrae's implied question; he parried with one of his own .

"What are you doing up here, Lieutenant? I believe you were confined to quarters."

"I was. But you issued an emergency call. You'll find in the regulations book that all spacemen, under charge of anything less serious than mutiny, are automatically returned to active duty by an emergency call. Now, those shunts—"

DEL MORGAN interrupted sulkily.

"I can answer that, McCrae. They were O.Q. yesterday. I inspected them myself."

"That did the trick," snorted Johnny Arbogast.

McCrae silenced him with a glance.

"He's probably right, Johnny. There's something I don't understand about this crack-up. Things aren't acting O.Q. It's a rogue asteroid we've busted on, and rogues are peculiar. They come wobbling in on crazy trajectories, and you can't do anything about 'em.

"This one's way off its orbit, though. Between Earth and Mars. And apparently streaking for somewhere like a bat out of Hades, and carrying us with it. Where? That's the question. Travers—audio Chief Engineer McGinty!"

"Yes, sir!"

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Lynch's face was mauve with outraged dignity.

"*Mister* McCrae! I'll remind you, sir, that *I'm* the captain of the *Bluebell*. By what right—"

"Got the Chief, Travers?" McCrae ignored him.

Travers shook his head.

"I can't get anything, sir. The intercommunication system is out of order."

"Then hop below and find out why the hypos aren't operating. And while you're there, find out the extent of the damage. Johnny, get to work! Shoot the stars on the astrocalc. See where this hunk of rock is piggy-backing us."

"Right!" said Arbogast.

He turned to the instrument and started cramming figures into its mechanical brain. McCrae turned to the impotently spluttering skipper.

"Captain Lynch," he pleaded, "a couple of days from now you're going to have me hauled before the Board, and cut off my jets. I won't argue that question now. We are faced with a more vital problem. At this moment I believe we are in grave peril. There are — peculiar circumstances here. I think I can be of assistance, sir. With your permission, I would like to remain on the bridge."

Lynch interrupted him with an irate wave of his hand.

"Never mind the grandstanding, McCrae. Return immediately to your cabin and consider yourself under arrest!"

McCrae's eyes studied the captain with gathering disgust.

"And if I refuse, sir?" he said slowly.

Lynch turned to the civilian spectator.

"You see, Mr. Wright? As I said, this man is a rebellious trouble-maker!"

"He is." Wright nodded. "McCrae, I advise you to obey orders. Your attitude is distinctly mutinous."

"And as for the danger"—Lynch stepped to the controls, pressed studs —"we'll lift off this planetoid, make whatever repairs are necessary and continue our journey."

He jabbed the studs again. Still nothing happened. He stepped to the auxiliary audio, rasped a query down its iron throat. Nothing happened. He coughed then, anxiously and waddled to the rocket plungers, fingered one dubiously.

Nothing happened.

KIRK McCRAE smiled grimly.

"Perhaps, Captain, you are satisfied now?"

A flying figure burst into the cabin.

"Well, Travers?"

"Ch-chief's completely baffled, sir!" puffed young Travers. "Hypos won't spark at all. Generators are working, and the electrical equipment seems to be in perfect order—but it's blanketed out, cold! McGinty thinks it's a hysterisis bloc. The audios are out, and the A.C. units—"

"Ship damaged much?"

"A small leak in Number Seven Foredeck, and one rocket-jet smashed, but she's navigable. If we could lift her off this rock, we could fix her in jig-time."

"But we can't lift," complained McCrae. "Why?"

Johnny Arbogast moved to his side.

"I think I've found out, Kirk. Look!"

He held out a sheet scribbled with computations. McCrae frowned as he studied them.

"You're sure?"

"Fairly. It's the only thing that explains—"

"How about our trajectory? Figure that yet?"

"Mmm-hmm. Read it and weep!"

This time McCrae stared at Arbogast's figures with something akin to horror. For an instant his pose was that of stricken consternation. Then he turned again to the skipper, handed him the sheets, spoke with a deadly finality.

"Well, sir, I was right. We are in a frightfully d a n g e r o u s position. There is only one thing I can think of. It's a fantastic plan, but with your permission, here it is. We must call all hands to the locks, get electrical equipment from the bins, and jury-rig—"

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"*Mister* McCrae!" Lynch's voice was disdainful. He rejected Arbogast's calculations with the briefest of glances. "I have been very patient with you. I am not interested in fanciful dangers, nor in your crackbrained plans for evading perils that do not exist.

"Nor do the computations of Mr. Arbogast frighten me. We are faced with a very simple problem. That of making minor repairs and lifting the *Bluebell* from an asteroid. We can do this without your aid. I repeat, therefore, my order. Return to your quarters and confine yourself there!"

Silence gripped the turret for the space of a labored breath. Then Kirk McCrae spoke. But not to his skipper. To his only ally in a hostile group.

"Johnny," he said quietly, "how long do you figure we have?"

"Hard to say," Arbogast replied. "You know how rogue asteroids are. They accelerate crazily at perihelion. Twenty hours. Maybe twelve. Maybe as little as eight."

"And each passing hour," said McCrae, "makes it more difficult. Captain Lynch, after reading Mr. Arbogast's figures, you still intend to rest quietly on this asteroid until the *Bluebell* has been repaired?"

"Exactly! Now, Mr. McCrae, if you will please withdraw—"

"I'm sorry, Johnny," McCrae said regretfully. "It's got to be done. Are you with me or against me?"

"I'm with you, Kirk," Arbogast said in even tones.

Lynch looked startled.

"What? What's all this about?"

THEN the two men moved as one. Two hands streaked to two belts. And Captain Lynch was staring into the black maws of a brace of needle-guns.

"I regret to inform you, Captain Lynch," Kirk McCrae said with infinite sadness, "that the *Bluebell* is temporarily under my command. Be kind enough to take off your gun-belt and toss it to the floor!"

But the skipper didn't react properly.

Captain Framingham Lynch was short and pudgy. Hours of pacing the recreation deck of a luxury liner had robbed him of youthful alertness, but he was a spaceman. He did not obey McCrae's command. Instead, he leaped forward and as he leaped he bellowed.

"*Mutiny,* by the stars! Get them, delMorgan!"

Had Lynch's aide been equally a man, there might have been a different end to the scene. For neither McCrea nor Arbogast could ever have forced themselves to use rays against a superior officer.

But delMorgan did not draw. Livid, he tossed his gun-belt to the floor. The skipper charged forward futilely into the encircling arms of Johnny Arbogast. Arbogast wrenched his gun from him, pushed him to the wall beside a wide-eyed, crimson-faced J. Preston Wright. A motion of the hand, and delMorgan made it a trio.

"Travers—" Arbogast said.

Ensign Tommy Travers was pale but determined.

"Take my gun if you want to, Johnny. But I'll string along with you and Kirk."

"Idiot!" McCrae snapped. "You'll do nothing of the sort."

Captain Lynch laughed mirthlessly.

"He's already done it, McCrae. That makes three of you now. McCrae, Arbogast, Travers. I'll see you all committed to a Uranian prison camp for this day's work."

At that moment the door of the control turret opened, and a slim, trim figure stepped in. Kirk whirled.

"Come in," he warned, "with your hands up— Oh! You!"

"In the flesh," gibed a gay voice, "and no duplicate. Captain, the passengers are asking why— Oh, Kirk!"

Eileen O'Hara's hand flew to her lips, and her eyes were bright with terror.

"Kirk," she whispered, "what have you done?"

"Some day you'll learn to keep your snub nose out of things, redhead!" grunted McCrae impatiently. "Why didn't you stay below where you belonged? Well, you might as well line

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up with the others. I've taken over control of the ship."

"Control of— But why, Kirk?"

"Must you know everything? Because our pigheaded captain refuses to believe we are in danger. Something has to be done, and quick. Lynch wouldn't try the only scheme that might save us. Well, hurry up! Against the wall, Sis!"

Slow seconds dripped away. Eileen's lower lip trembled; she caught it in firm, white teeth.

"You're sure, Kirk?" she said slowly, quietly.

"You don't think I'd mutiny unless I were, do you?"

"Yes!" spat Captain Lynch. "And I'll see that you get a hundred and fifty years for this, McCrae!"

"No," said Eileen soberly. "No, I don't believe you would, Kirk. That's why I'm not going to get in line."

"What!"

"I'll be more useful," said the girl, "out of it."

"No!" groaned McCrae. "You crazy redhead—"

"Four of you now," counted Captain Lynch.

"The more the merrier," Johnny Arbogast grinned. "We're in up to our necks now. We'd better get going, Kirk."

MC CRAE surrendered to circumstances wholly out of his control.

"All right," he said, "you asked for it. Keep an eye on the prisoners, Eileen. This may take a little time."

Crisply came his instructions.

"Johnny, first of all check your figures. Make sure they're accurate to four dots. Tommy, go below. Don't tell the engine room what's happened up here, but collect a crew, bust open the lockers, and get all the uninsulated cable you can find. Dress your crew in bulgers, take them and the cable out onto the hull and—start wrapping!"

"Start—*wrapping*, sir?"

"Around," nodded McCrae, "and around and around. Till this ship looks like a cocoon. Space the cable about fifteen yards between coils."

Arbogast, seated at the Calc desk, looked up with sudden understanding.

"A coil!"

"Coil, your eye! A solenoid. With us as the core."

"It's crazy, Kirk!"

"Sure. But we've got to try something. And if your guess is right as to the nature of this asteroid—"

"It wasn't a guess. But your plan won't work!"

"It has to." Grimly. "If it doesn't —well, what does your re-check say?"

Johnny Arbogast nodded reluctantly.

"You're right. It has to. The trajectory is exactly as I figured before. And we have already started to accelerate."

There had been a long, strained silence from those seated along the side wall under the surveillance of Eileen. Now Captain Lynch was no longer able to control his curiosity.

"Would it be asking too much, Mr. McCrae," he asked stonily, "to demand a translation of that gibberish?"

Kirk McCrae glanced up from the controls over which he was hovering, fingers probing, mind planning every move he must later make. He could not prevent the note of sarcasm that crept into his voice.

"You saw the figures, Captain Lynch. Interpret them."

Lynch swallowed, with difficulty, a portion of his self-esteem, and made a grudging acknowledgment.

"I—I didn't study the figures, McCrae."

"I thought not. Very well, then; here it is in a nutshell. The reason our electrical equipment is blanketed, the reason our hypatomics won't operate, is that the rogue asteroid on which we've crashed is—*magnetic!*

"That's why Travers couldn't avoid hitting it, shields or no shields. It drew us in like a slim, steel needle."

"Even so—where lies the danger?" Lynch demanded. "Apparently you've thought up some method of escaping this—er—magnet. Why, then, did you deliberately mutiny, set yourself in line for inescapable punishment?

"I am a determined man, Lieutenant. Perhaps even"— he gulped, continued

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doggedly— "even, as you said, 'pig-headed.' But I am not unreasonable. Had you not moved so swiftly, I would have discovered this fact for myself, listened to your plan—"

"*Time!*" exploded McCrae. "That's why! *Time!*"

"But we have lots of time—"

"We have," corrected McCrae savagely, "between eight and ten hours, according to Mr. Arbogast's revised figures. Because this planetoid on which we are ensnared, Captain Lynch, is racing at lightning speed *into the sun!*"

CHAPTER V

The Acid Test

PRESTON WRIGHT gasped. So did Eileen O'Hara. Lieutenant Ronald delMorgan laughed curtly.

"Rot!" he said. But Captain Lynch turned on him.

"Quiet!"

He met McCrae's gaze squarely.

"Lieutenant," he said, "may I see those figures again?"

Silently, Kirk McCrae passed them along. And as he did so, a prayer hung on his lips.

Captain Framingham Lynch was no fool. He was a spaceman. What he said next was a measure of his true stature.

"Lieutenant McCrae," he said, "is there any way in which I can assist you?"

McCrae's mouth dropped open. Which, considering the sudden way his heart leaped, offered a rather dangerous exit to that battered organ.

"S-sir?" he stammered.

"I am an old man," said Captain Lynch. "And it may be that I am an old fuss-budget, as well. But I've run the spaceways, man and boy, for almost thirty years. My experience may be of some value to you. That is—if you'll advise me what you are planning to do."

It was at this point that Lieutenant delMorgan, his astonishment equalling that of the flabbergasted McCrae, now served a neat turn on the chameleon circuit. He took his cue from Captain Lynch. Suddenly he too was all eagerness, sweetness and light.

"Kirk, old boy!" he said heartily. "Count me in on this, too. Anything I can do—"

"You," snapped Captain Lynch sternly, "be quiet! I'll settle with you later, delMorgan. Perhaps I should have listened to Miss O'Hara a week ago. Well, McCrae?"

"Thank you, Skipper," McCrae said gratefully. "Well—here's the way I figured. Inasmuch as the planetoid had so much magnetic power that it drew us to it, despite our force-fields and motors, it is obvious that we can never generate enough power to escape it with our own potential!

"But there is another way of escaping—using power not of our own making."

"And that?" prompted the skipper.

"The potential of the asteroid itself! According to our ammeter readings, this rogue planetoid is a highly charged positive mass! You might call it a 'cosmic positron' on a gigantic scale.

"We, as a more or less 'neutrally charged' mote of steel, were naturally drawn to it. But—if we could develop a high negative charge from our own power, augment this by setting up a direct current through a cable solenoid engulfing us, the core—"

"Opposites repel!" finished the captain. "The asteroid would kick us away from it!"

"Far enough," nodded McCrae, "that we might reset our shields and blast clear! Exactly!"

LYNCH leaped from his seat.

"Then what are we waiting for?" he demanded wildly. "Eight hours from the sun gives us only about four hours leeway! Blast you for a stupid young puppy, McCrae! Don't you realize that once we get within four hours of the sun, we'll *never* kick free?

"You stay here and get your stud-placements figured out! Come on, Arbogast! You and I will go and help

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Chief McGinty and his engineers.

"Nurse O'Hara!" The Old Man had now completely forgotten the loss of his command. He was a new man; a man Kirk McCrae had never seen before. A man he liked.

"Nurse, go below and keep the passengers occupied. Tell them—oh, tell them whatever you darn well please! That we stopped to refuel, or something silly. Passengers are stupid sheep, anyway."

His chin jutted out.

"All right, everybody, move!"

DelMorgan rose uncertainly.

"How about me, sir?"

"You? Oh—you?" Lynch glared at his late favorite witheringly. "I don't care what you do. For your own good, I would suggest you keep out of Lieutenant McCrae's reach, though. Otherwise he might 'attack' you again. I hope!"

After that, the events of the next two hours were a sort of anticlimax. True, those were not altogether happy hours for the sweating crew and command of the luxury liner *Bluebell*. There was that dreadful moment when it was learned that the cable line would not reach as far as had been hoped.

McCrae's heart sank suddenly to his boots when that revelation made itself known. It was Captain Lynch who remembered, in the nick of time, the fourteen cable-coils in the cargo bin, a shipment picked up for Lunar III at Venus City. This was no time to argue the sanctity of cargoes. The coils were hauled from their place of concealment. The job was completed.

There came that other devastating moment when Kirk McCrae pressed the studs that, theoretically, should have activated the coil, jolting the *Bluebell* free of its captor planetoid. And nothing happened! But this time it was Johnny Arbogast whose quick, keen, mathematical mind supplied the solution.

"Counter-E.M.F.," he g r u n t e d. "Light and heat circuits aboard the ship. Got to cut 'em!"

"The passengers," said Tommy Travers. "They'll be scared."

"And cold," assented McCrae, "and in the dark. But that's better than being roast tourists. Cut 'em!"

Thus it was that, a scant eighteen minutes before the *Bluebell* hurtled along on its unwanted cosmic steed into the solar danger zone from which, according to Johnny Arbogast's hair-trigger computations, there could be no escape, the last arrangement was completed.

Kirk McCrae, his heart in his mouth, pressed the stud.

It worked. There came a jolting lurch, so violent that even those who expected it were thrown off their feet. Then a sensation of whirling, headlong flight. When this sensation slowed, McCrae pressed the second combination of studs, those which activated the *Bluebell's* rocket-jets.

With a last reluctant shudder, the luxury liner yanked free of its bonds —and was once again afloat in space, safe to return to Earth.

IT WAS then, and then only, that Kirk McCrae relaxed. He had not realized he was so weary, that his brain was so dry with fatigue, until he tossed himself into a chair, knowing his task was done, and done well.

And it was then that Captain Lynch came to him, accompanied by a stern-visaged, lantern-jawed old man, a vice-president of the Fleet for which they both worked. A frown was on Lynch's face. Even the jolt of escape was not so great as that which shook McCrae at the skipper's words.

"What are you doing on the bridge, McCrae? You're under orders to go to your quarters, are you not?"

McCrae sat bolt upright. His voice refused to work.

"B-but," he stammered, "but I th-thought—"

"Hrrumph!" said J. P r e s t o n Wright. "Just as you say, Captain, this is a most troublesome young man. Well, you'll not be bothered with him any longer. I've been witness to his indiscretions today. And I assure you, he'll no longer serve under you or any other captain of the IPS Fleet!"

There were a million words clamoring for utterance in McCrae's brain.

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But his tongue couldn't find one. Not at this moment. He just sat there, staring, incoherent, incredulous.

And then—

"Because," said Captain Lynch softly, "you deserve rest, you're ordered to quarters for a good long sleep, McCrae. And—" He grinned. "And what Mr. Wright means is, you'll never have to take orders from any captain again. Because when we get to Earth, you'll be given what you've so richly earned —a command of your own!"

There crept a note of regret into his voice.

"I am sorry, Lieutenant," he said sincerely, "that we learned to understand each other so late. Our work together might have been more pleasant. However, you're a luckier man than I. I'm stuck on this double-blank-blasted passenger run for the rest of my natural days. You'll get a decent command. A patrol ship. Perhaps even a fighting vessel."

Kirk McCrae stared.

"S-skipper," he said weakly, "I hardly know what to say. But I—there's one thing I'd like to do. I'd like to serve one last cruise under you before I take a command of my own. If it can be arranged that way—"

He looked at Preston Wright pleadingly. And Wright nodded.

"It can be, Lieutenant. If you really want it so."

"I do," said McCrae simply.

Captain Lynch smiled. It was a proud smile. Then he frowned. And his voice was curiously gruff.

"Agh!" he stormed. "The man is stark, staring mad! What he needs is medical attention! A nurse. Where is Miss O'Hara?"

And—it was a funny thing. But that happened to be exactly what Lieutenant Kirk McCrae was thinking.

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Jac's heart went out to the wretched human captives, but he dared not show it.

FUGITIVE

A Story in the Robot Saga

By RAY CUMMINGS

Author of "Decadence," "Shadow World," etc.

JAC LORK, the son of Roc Lork, moved quietly around the dim, torchlit cave, arranging the preliminary details of his momentous task. Taller than most young men of his time, he was a slender but muscular figure, clad in animal skin garments. The electronic torchlight of the cave illumined his grim, strong-featured face, with its high-bridged nose and deep-set, dark eyes.

Like all humans now, the mark of the forest was upon him. His legs and arms were scratched by the bram-

Jac Lork Invades the Stronghold of the

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bles encountered in his long march north. The leather buskins on his feet were tattered and grimy.

If only his father were here to advise him, Jac thought sorrowfully. But when the little clan of fugitives had fled before the coming snows last autumn, Roc Lork had suddenly sickened and died. Roc had been one of the few survivors from the days before the Vitos had revolted, and he had never grown used to this hard life in the forests.

The cave had been fitted up by Jac and his older companions as a crude laboratory. Fibroblast flesh floated in the containers of liquid plasma, preserved since two weeks ago, when Jac and his companions had been able to seize a roving Class D Vito in the forest and strip his unnatural flesh from him.

"Are you ready, Jac?"

Two of his companions had entered the cave to help him. They were older men, frail, pallid, garbed in the crude animal skins which were all the fugitive humans, hunted so constantly by the murderous Vitos, were able to devise.

It had been a horrible time for mankind, these twenty-five years of Jac Lork's brief lifetime. He had heard details of the old days from his father. Man had once risen with scientific achievement to the peak of civilization. There he had rested and inevitably had fallen into decadence. Through the centuries the great cities that had been built were neglected. Now they lay abandoned in the forests, decayed and ruined, with the vegetation and silt of the years almost burying them.

Mankind, living only for pleasure, had neglected science. In only one way had human science been maintained—for the creation of the synthetic Vitos. Jac's grandfather, Jon Lork, had been in charge of one of the Fibroblast Laboratories in the settlement then called Altona.

Centuries ago man had created the first primitive Vitos. Fibroblasts—segments of tissue—were grown and nourished in plasma, grafted onto other, different fibroblasts, becoming structurally more and more intricate, until at last they were modeled upon platina skeletons in the fashion of men. With clothing for ornamentation, tested and rated into classes, the artificial creatures were released for their slavery to mankind. But that, of course, was before the Vitos revolted and almost destroyed their masters.

WHAT HAPPENED BEFORE

CENTURIES ago, man learned to create Vitos — synthetic thinking creatures constructed in his own form—and made his artificial slaves do all his work, while he devoted himself to pleasure. Knowing that man possesses one last weapon, the peace ray that temporarily paralyzes muscles, the Vitos make themselves immune by combining colloidal rubber with their synthetic flesh.

On Roc Lork's wedding day, his father Jon Lork discovered that the Vitos plan to revolt against their masters. The old man is fatally wounded. Before he dies, he tells Roc about the family science records, hidden in a cairn, that can help mankind win back to power against the Vitos.

The Vitos strike, armed with a terrible weapon. Like hunted beasts, men are driven into the forests. Roc Lork takes with him and his bride the box of science records. But before man can use it to challenge his conquerors, Roc realizes, he must first overcome his principal enemy—himself.

THE entrance of his companions pulled Jac Lork back from his thoughts.

"Yes, I am ready," he said.

He stripped off his animal skin clothing and lay down on the crude table for the surgeons to work upon him. He tried to steel himself against the pounding of his heart and his inward trembling. Surely this desperate gamble he had planned would turn out victoriously. But for a human to venture among the Vitos—to walk alone, disguised, into their stronghold of Vitara—it was almost unthinkable daring. But he realized, too, that its very daring was his protection. No Vito would consider its possibility.

Mighty Vitos to Steal a Single Fact!

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As he lay with closed eyes, his friends shaved his head. Then they put the fibroblast flesh upon his hands, a little of his forearms, his neck and face, and fastened the Vito head-covering over his skull.

His mind roamed back to his father's day. The Vitos had actually been given control of the Fibroblast Laboratories, after they had proved that they could run the laboratories better than any humans. And the humans, decadent, avoiding all work, had gladly let them do it.

Then had come that night of the Great Massacre, when the Vitos rose everywhere in revolt. Of all human weapons of science, there had been only a paralyzing ray. Secretly the Vitos had made themselves immune to it, mingling with their fibroblast flesh colloidal derivatives of some form of synthetic rubber, toughening the flesh, desensitizing it. The electronic paralyzing ray had been rendered wholly useless.

But the Vitos, with a horrible ray beam of their own, had suddenly turned on their masters. Only a few humans had escaped. Jac's father and mother, with little bands from the different settlements, had fled into the forests. All Jac's lifetime he had known only roving, furtive human beings.

Man, the greatest product of Earth, must not become extinct. Jac's father and his grandfather had said that, and that had become the driving impulse in Jac's own life. He had the old family science records which his father had given him. Roc Lork had tried so hard, with a desperate handicap, to develop a scientific weapon that would save mankind from extermination by the inhuman Vitos. He had failed. Of all his works, only one thing was not useless—his belief, which he had passed on to Jac, that the Vitos were not invulnerable.

Jac felt the fibroblast drawing against his skin.

"It is functioning now!" one of his companions said exultantly. "For a month it should remain free of deterioration. Will that give you enough time, Jac?"

"Yes," he answered. "Of course."

He opened his eyes, stared grimly at the wrinkled fibroblast tissue covering his hands. His neck was stiff, puffed. The scar-tissue on his face weirdly pulled his mouth-corners to make his mouth a long, narrow slit. And the folded scar-flesh bulged under his eyes so that he could see it as two dark blurs.

He was a Vito!

He dressed himself in the smooth gray clothing ornamentation of the synthetic creature they had trapped and killed.

"Is it all right?" he asked hopefully as his companions surveyed him.

They nodded. They were solemn, grave, spare of words, gazing at him as though it was the last time they would see him. He gestured to the littered apparatus, so crude that a Vito master would have scorned it.

"No need to carry it back over the long journey," he said. "Leave it here. If I should fail, no one will need to try this again."

At the mouth of their secret hideout, not far from the great Vito city of Vitara, Jac paused to bid them farewell.

"Tell my mother, Miela, that always I love her," he said. "When you get back south to our little clan, tell her that. And tell her that I will return to her soon. I shall bring back with me first-hand knowledge of the most recent Vitos. Only in this way can we learn the weaknesses of our enemy. When I return with what I shall discover, we will continue until we can rise up against the murderous Vitos."

With a wave of his hand, he started down the slope. Stiffly erect, a Vito figure in the starlight of the warm summer night, he vanished into the forest, heading for the great city of Vitara. . . .

IN HIS aisle at one end of Room A-45 of the huge Fibroblast Laboratories, Jac Lork—known now as Elb-r2-r4—moved quietly back and forth. He was new at this work. He had been here, as the Vitos counted it, only ten Earth-axial rotations.

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The work was simple but monotonous. This was the Protoplasmic Division of the Great Central Government Laboratories, almost the initial process in the scientific creation of Vitos.

It took nearly two years to turn out a finished Vito of the Class A, genius rating. The Class D, moronic muscle workers required only eight months. Jac's work, though, concerned only the protoplasmic preembryos of Class A and a small section of B and C.

Jac himself, with the Vito label of Elb-r2-r4 which he had given himself, had secured a rating of Class C here. He had told the Vito authorities he had roamed from the south, down in the Virginia coastal region. He had applied for sustenance work and had taken the Government tests. And so far he had played his daring role successfully.

His work seemed up to standard requirements. Certainly there was no scientific reason why any Class C Vito like this Elb should be unable to do this simple work satisfactorily. His aisle in Room A-45 was lined with racks on which the transparent containers were ranged. The pre-embryonic fibroblasts grew in the containers, floating in the clear liquid of plasma, blood serum from which all the cells had been removed.

It was really amazing, this growth of the fibroblasts. Jac's work was to wash them free of poisonous waste at intervals of twelve hours, and check on their growth, which, at this stage doubled in size every two days. Then, when the process under him was complete, he switched them, still in their globes of liquid plasma, onto the moving lines. They were carried into the surgeons' room, where they were cut back, grown again, and then grafted onto other type tissues. Room A-45 was somber and dim as Jac moved about his customary tasks. Through the big half-shrouded windows he had a view eastward over the Atlantic. A full Moon was rising, blurred and dull-red at the horizon from the heat of the day which had ended.

Jac was tense. He tried to do his work with smooth, swift skill, as a Class C Vito should. But he was conscious that the gaze of Dagg-299,

ROC LORK

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the work-checker at the end of this aisle, was constantly upon him. For some reason Jac had always been afraid of Dagg, a Class C Vito, but of the giant size. The bloated scar-tissue of Dagg's face seemed eternally contorted, scowling, as though he hoped he could find fault with this newly arrived Vito.

Tonight, more than ever, Jac was apprehensive. Had Dagg seen him go to Room 34? He had no right to peer into the Surgical Selective Room, where the original tissue-segments were cut from living animals, to form the fibroblasts of pre-embryonic Class A Vitos. But Jac had wanted to see the start of the intricate process of creation.

And had Dagg seen him that other day when, even more furtively, he had stared into the room where the almost finished Class As, complete with clothing ornamentation, activating of their own volition, were ranged in long rows and being drilled by the B-plus commanders? This was the last process, the subjugation of the new individual to the will of the Vitos' rigidly dictatorial state.

FOR a long time Jac had stared, silent and tense. And then, silent as a dark shadow in the dim corridors, he had slipped back to his post in Room A-45. But had Dagg seen him?

And most important of all, had the suspicious Dagg seen Jac go several levels down and far into a north wing of the great buildings? The room into which he had peered was long and dim, with huge vats in which the fibroblasts, now massive and intricate of structure, were suspended in a colorless medium.

The room held other globes of what seemed to be highly developed nerve-ganglia. The white-robed Vito surgeons were methodically inserting threads of the nerve-ganglia into the tissues of the fibroblasts. Puzzled, Jac tried to remember if his father had ever spoken of man's using such a process as this.

Unable to recall anything about this development, Jac had watched the surgeons for a longer time than he knew was safe. He had even pressed his ear against the windowed door and listened until he heard the Vitos talking about the strange process.

He was right! Nerve-ganglia was actually being woven into the tissues of the fibroblast. But what was the purpose?

The next day Jac had tried to locate the compounding rooms, where the colloids of rubber were mingled with the fibroblasts. He searched until he feared he would be discovered, but the idea that had come to him the night before had to be verified at all costs. At last he had to give up, for he had found no such rooms.

But his failure was positive proof. The Vitos were no longer desensitizing the fibroblasts with colloidal rubber!

Jac had the information he had come here to get. A day or two for further proof and he would be ready to escape. With the knowledge he had already gained, man could not fail to strike a decisive blow against the murderous Vitos—if Jac could get back safely.

He glanced up out of the corner of his eye. As always, Dagg was watching him closely. Did the gigantic, hideous Vito suspect? Why couldn't those hostile, narrowed eyes turn elsewhere and let him work in peace?

Suddenly Jac's trembling, nervous fingers slipped. The globe he was handling fell and crashed on the floor, its plasma scattering and the little fibroblast quivering, dying in the air.

Horror surged within him. He stood stricken, motionless. He had an overpowering impulse to dash for the window, leap through, but he knew Dagg's weapon would instantly disintegrate him at that short range.

Dagg came stamping up fiercely.

"You witless bungler!" he raged. "This I have been expecting! Stand left, at rest."

Jac stood with his hand at his side and his head bowed.

"I am sorry," he said contritely. "It was an accident. I do not think it will happen again."

"I am sure it will not!" Dagg roared. "Not in my aisle, anyhow. Turn left.

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Now march straight. Exit Forty and and up the ramp. We shall see what the mentor decides on this."

Jac marched. The humming, bustling activity of Room A-45 was hushed as all the Vito workers gazed in silent awe.

WITH Dagg close behind him, Jac reached the room where the mentor Vito, chief of this division, sat at a desk and hurriedly scanned its littered reports. His instruments of communication were stacked like an awesome wall around him.

"Well?" the mentor said, look up sharply. "Off routine, Dagg? What is wrong—an error of this worker?"

"I have sensed it, Mentor, through many work periods," Dagg replied fawningly. "This Elb, something very queer makes him work with less skill than normal, though he tested into Class C upon his application for admittance. That was only a few days ago."

The mentor's vision focused upon the culprit.

"From whence did you come?"

"Virginia coastal region," Jac answered, quivering inside.

"He tested Class C," the mentor pondered, "and yet he is clumsy with the absurdly simple tasks of Room A-Forty-five?"

The aspersion he cast upon the work that Dagg supervised made Dagg frown, but there was nothing he dared say.

"I request your decision of pardon," Jac said abruptly. "I request work in another aisle of the same type."

The mentor snorted, amused.

"So?" he queried. "Dagg's gaze on you creates nerve-trembling? Under the supervisor of another aisle, you think you would be more skilful? Is that your implication?"

"Yes," Jac stated. "There are no signs of age deterioration in me. I need no extra nourishment. But perhaps I have a slight complex. With another supervisor—"

Surely Dagg had not seen him peering into those room where he had no right to go. Dagg would have accused him by now. And if the mentor transferred Jac to another supervisor, that would give him a better opportunity to see still other things that might be helpful in the struggle against the Vitos.

"Do you agree, Vito-Elb, that the incident is correct as Dagg tells it?" the mentor asked.

"Quite correct," Jac acknowledged.

"He was beyond his bounds in the north corridor, fourth level, last night!" Dagg cried abruptly.

Jac tightened inside with a sudden rush of terror, but he managed to say calmly:

"I had been to the Class C nourishment room for my routine injections. Permission had been given me. Dagg gave it."

"Is that correct?" the mentor demanded.

Dagg reluctantly nodded. "But I have something much more important to report, Mentor."

He leaned forward and whispered hurriedly into the mentor's ear. As he spoke softly, incredulity appeared on the mentor's scarred face.

"But, Dagg, would that fact not have been noticed immediately?" he asked.

"His perceptions lack normal acuteness," Dagg insisted.

"It's impossible!" the mentor exploded. "Nobody would be so idiotically foolhardy. He could never hope to escape detection."

"Perhaps not," said Dagg insidiously. "But checking it would show initiative."

"True." The mentor's eyes gleamed at the possibility of reward. "It would also be very simple. I could do it myself and take almost no chance of injuring his tissue."

"But you have no authority, Mentor."

"No." The superior Vito sighed. "I suppose I will have to recommend it." He began filling out an order blank. "Present him to the Vito supreme, Dagg. I will send a relief supervisor to your aisle. I have suggested that the Vito supreme send this Elb to Surgical Test Seventeen. In one moment they will be able to find out."

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Horror, almost despair was rising within Jac. He had been unable to overhear what Dagg had whispered, but the mentor's reaction had told him as plainly as words would have done. He glanced around swiftly for a way of escape. He would have to risk being disintegrated by Dagg's weapon. . . .

A commotion in the back of the big room made him swing around. His escape was cut off!

Through the door three huge Vitos burst into view. In the corridor down the ramp a hundred other Vitos had gathered in awe, watching and excitedly chattering. The three giant Vitos had come back from a hunt, bringing their prizes—four humans, captured alive!

Jac stared sympathetically at the wretched captives. There were two middle-aged men, an old woman and a girl whose loveliness shone through her terror like a beacon fire shining through gray clouds. Jac's heart went out to them, but he dared not show it.

"Good!" the mentor exclaimed. "Very good indeed!"

"There was distant smoke last night," the leading hunter said. "We had sensed them from far away, for no band of humans would dare live so close to the great city of Vitara. We stalked them, found just these four and brought them alive for the torture ceremony."

"We claim the legal reward," said another hunter. "The Vito supreme will give us personal praise also?"

"Of course, of course," the mentor agreed. He turned to the captives. "Do you wish to speak before I sentence you by Vito law to the ceremony of death by public torture?"

The old woman stood dazed by her terror. The girl was trembling, numbed. The two men had drawn themselves up bravely, their pinched, half-starved faces pathetically defiant.

"It is all right, Mother, be not afraid," one of them said. "Every human has to die." And to the girl he added: "Try to be not afraid, Muta. Little daughter, I am truly sorry for this."

"We have nothing to say," the other man stated harshly to the superior Vito.

"You understand," the mentor asked, "that your forebears, with their science, created the first Vitos?"

"We understand," the man said.

"You tried to keep us as slaves. That made you worthless, because we did everything for you, even your thinking."

"I have heard about that."

"And then gradually we took over the creation of ourselves," the mentor went on. "Always we made ourselves more intricate of structure, more powerful. And then there came the time when we became superior to you. One night we killed you and drove you out, as though you were timid animals. And you could do nothing but run. You know that?"

"We know it."

"Very soon you will be extinct. Your death—the death of every remaining human—that is Vito law. And yet you roam the mountains. You try, with your puny power, to keep alive and raise others as miserable as yourselves."

The mentor paused. When the man did not answer, he said to the Vito roamers:

"You have done very well. You shall have the legal reward—free sustenance, free maintenance and freedom of movement for three orbital-rotations. And you shall be honored by public acclaim of the throng who will witness the torture and death of your captives." The mentor raised his arms. "Power and glory to Vito life!"

"Power and glory to Vito life!" they echoed.

THE guards were preparing to lead the miserable humans away.

"Wait," the mentor ordered. "These three older ones, take them to the death rooms. But this young female —" He began filling out another order. "I am thinking, Dagg, with the new processes for the compounding of Vito flesh in the Classes C, B and A, this young human may be of service to our research surgeons. An analysis of the structure of her nerve fibers could possibly

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solve our few remaining difficulties. Take her to the Vito supreme with this information request from me. It may be that he will commend me for my initiative."

He chuckled in appreciation of himself.

"And this Vito-Elb," he went on, "have him taken to Surgical Test Seventeen. A surgeon would not injure his tissues even if you prove to be wrong. The test is quite simple, requiring only careful antisepsis. One drop of blood would be sufficient proof."

To bleed and be betrayed that you are human! The thought brought Jac terror and a wild despair.

Dagg shoved the girl captive beside him. She stood drooping, a ragged little figure, with her tangled dark hair negligently pushed back. She had given Jac only a single numbed glance. To her, if she thought about him at all, he was merely a Vito in disgrace.

With deliberate simulation of the jerky steps of a Class C Vito, Jac walked out of the mentor's trial room, careful to avoid looking at the girl or showing the fear in his heart.

A winding ramp led up through the dusk of outdoors to the great cubical structure of metal where the Vito supreme lived in solitary splendor. To the left, a sheer metal wall rose a thousand feet in the air. To the right, beyond the terraces of the huge Fibroblast Laboratory building, the city of Vitara loomed in the sky, monstrous cubical structures, humming with industry. The catwalks and metal pedestrian ramps connecting them were dark threads in the pallid glow of the city's lights.

"Turn right, mount to the upper ramp," he heard Dagg's voice ordering.

To bleed and be betrayed that you are human! Now that he was so close to doom, he knew he had escaped detection only by a miracle. He could have cut himself on any one of a hundred implements. The realization made him tremble with horror. But worse than that was the knowledge that he had come so close to success, only to lose it at the very last moment.

A surgeon's knife would swiftly unmask him. A minute slash, a tiny drop of blood, and he would be revealed as a human masquerading behind the fibroblast disguise of a Vito.

The test was so easy that Dagg himself had probably been tempted to do it. Only the fear that he might be mistaken had kept him from the attempt. A Vito's tissues, cut by a knife, would decompose quickly, and Dagg had only his suspicions, not positive proof. But the surgeons, taking scientific precautions in case Jac was a real Vito, would run no such risk.

Here on the upper ramp the city's glow vied with the moonlight's silver sheen. But close under the ramp, with a drop of hardly more than six feet below the rail, was a rocky declivity between the laboratories and the enormous house of the Vito supreme. The rocks led down to the shore, beyond which the great Atlantic lay like a monster asleep, with slow, undulating, rhythmic breath.

Jac was tense, watchful. This was his one chance to escape. If he failed, it would be his last. He glanced furtively at the girl, wondering if he could risk saving her, too. She walked lithely beside him, for all her drooping spirits. Jac knew that in danger she could run and leap like a frightened faun. He nodded and smiled imperceptibly.

DAGG was marching stiffly, a little ahead of them now, with his gaze toward the house of the Vito supreme. From the pleased look on his hideously scarred face, he was thinking of his reward for displaying initiative.

Jac's fingers gripped the girl's arm. As she turned, he lifted a warning finger to his lips. Swiftly he leaned down to her, his mouth near her ear.

"Be quiet!" he tensely whispered. "I am human! We will jump this rail and run—"

She gasped, then gathered her wits enough to nod.

They came to a place where the rail was a little lower. As Jac touched

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her arm for a signal, they leaped. They heard Dagg's startled shout of surprise as he wheeled around and fumbled for his weapon. The shot sizzled past Jac in mid-air as he vaulted. Then he was on the rocks with the girl, gripping her hand as they leaped and ran with a desperate agility that no Vito could equal.

Above them Dagg was firing and shouting. The commotion blurred and muffled as they found a little ravine and ducked into it. At the shore the rocks were grottoed where the sea had eroded and undercut them. The fugitives skirted the giant city with the clamor sometimes horribly close to them and sometimes almost gone in the distance.

The Moon, as though nature wanted to aid them, had gone under a cloud. In the merciful darkness beyond the edge of the city, at last they gained the open forests, clambered up to the hills, then into the wildness of the broken mountains, where at least a human had a chance for his life.

When they came to a stream the girl sank down and in a moment was asleep, too exhausted even to question this strange Vito who had said that he was human and had helped her to escape.

With shuddering repugnance Joe stripped off his Vito body ornamentation and plunged into the stream, dissolving the loathsome trappings of fibroblast tissue. Then he emerged a pale, youthful human. He felt as though he had been through Purgatory and had come back at last purified, attaining again his birthright of humanity.

He plucked leaves and sat by the edge of the stream, weaving them into a semblance of human garment. He tied the little garment around him with a surge of pride that he was a man.

Beside the girl, in the forest, beside the stream, at last he slept. When he awakened the Moon was low in the west, reddening in the cloudless night sky. To the east, from the forested heights here, he could see far out to the broad Atlantic. The low stars were paling in the dawnlight.

The girl was gone from beside him. Then he saw her a little distance away, peering at him from a thicket. Her hair, so astonishingly thick and long, fell in waves from her head, over her shoulders and framed her lovely face.

He raised himself up on one elbow. At his beckoning gesture she timidly came forward.

"Sit down," he said. "We had no chance to talk before."

"You—you are that Vito who ran with me?"

"Yes. I was disguised. I had an an important reason to go among the Vitos. There was knowledge that I wanted, and I got it. I did not know that other humans would dare to be in this neighborhood. You and your family got caught. I am sorry."

"Only last night," she said. "It was not far north of where we are now. My clan is going toward the south. The snows will come here."

"Many of you?"

SHE shuddered. "No more than fifty are in our clan. My mother sickened and died during the last snows. And the night before this one, my father, my uncle, my grandmother and I were separated from the others. We were caught. You are a stranger here? You are moving alone?"

"Yes," he said. "I am going south. "What is your name?"

"I am Muta."

"I am Jac Lork. We were a big clan once. My grandfather was in charge of a Fibroblast Laboratory. My family has records of human science."

"My clan is so small now," she mourned. "We have to go south. The snows are bad for the old people in the clan, for I am the only young one." Again she shuddered. "Those of us who are young or almost young have to wander for food and so easily are caught."

He nodded. "I know."

In the silence that fell between them, the dawnlight from the east was growing. It gleamed in her eyes, where swimming mists were gathered.

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"My clan is not far to the south of us now," she told him at last. "You said you wanted to go south. You and I are young. We would travel faster than our clan. And I know the route they planned through the eastern forests."

"My clan is also in the south," he answered. "I am taking important knowledge back to my people. My mother, Miela, is there. I was thinking that if we overtake your people now—"

"We need a man who is young," she said eagerly. "There is so much food to get. I can kill a bird with my slingshot at more than a tree-length."

"So can I." He smiled. "And my people have knowledge of human science. Your clan will join mine." He put his hand gently on her slim shoulder. "And you will join me."

"I would like that," she whispered. "But, Jac, why did you dare go into the Fibroblast Laboratory, disguised as a Vito?"

"My father, all his life, tried to find a way by which we humans could overcome the Vitos," he said grimly. "He sought in them a weakness that human science could attack."

"And you have found it?" she asked breathlessly.

"I think so. They are changing the fibroblast flesh, Muta. In my father's time they toughened it with colloids of rubberoid, desensitized it. They're not doing that now. More than that, they are weaving into it highly developed nerve-ganglia, continuously making themselves more and more sensitive!"

SHE could only stare blankly. A mere girl of the forests, how could she understand the amazing import of his discovery?

"Can you imagine why they are doing that, Muta?" he asked. "To make themselves more like humans! That is their weakness. Man's science is still crude, but it is progressing. The members of my clan are studying, working all the time. And now that I have found what I think is the Vitos' fatal weakness, we shall work and study harder than ever."

Jac's eyes were glowing with the light of his steady purpose—the purpose of his father and his father's father, of all the Lorks, who had been determined that man must not become extinct.

"We will accomplish it, Muta! I shall find a way." He stood up and drew her erect. "We must start now and try to overtake your people today. With all of us working together, the time will come when the murderous Vitos will go down before rising mankind!"

Next Issue: REGENERATION, Third and Concluding Story in the Robot Saga, by RAY CUMMINGS

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We gazed in consternation at the damage the Ganymedian monkey had done. (Chap. VIII)

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VIA JUPITER

By EANDO BINDER

Author of "Mystery World," "The Teacher from Mars," etc.

CHAPTER I

Trouble in the Asteroids

HELLO, Earth!

Jupiter Expedition Number One reporting, via etherline code radio. Operator Gillway at the keys, with very numb fingers. We are far from the sun, in a sector of space that hardly knows the word heat. Ninety-second day since leaving Earth.

We landed an hour ago—on Ganymede, of course, largest moon of Jupiter. We could not think of landing on Jupiter itself. Its crushing gravity would have pulled our ship down like a stone. Perhaps in the future, powerful enough engines will be made for a try. But at least we are in the Jovian system, to observe

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at close quarters the wonders of this faraway planet.

It has been a tremendous journey—three months in space, 400 million miles, eight times as far as the Mars hop. Even that swing around the sun, from the Venus Expedition back to Earth, was only 200 million. All these three months, the sun has steadily dwindled. It's little more than a very bright star to us now.

We had some excitement, going through the asteroids. In the future, spaceships may be able to carry enough fuel to arch *over* the Asteroid Belt, but we had to drill right through and take our chances. It was easy enough, with the staff of experts on Earth, to plot a course that would avoid all known asteroids.

But all aren't known! Some five thousand have been observed telescopically from Earth. Markers estimates, from the number we passed per cubic mile, that there must be a total of at least fifty thousand!

One day alone, we skittered by one hundred thirty asteroids, ranging from the size of a house up. Cold, airless, bleak little worldlets, like a toy universe. They flashed ahead and behind briefly, like stars playing a game of hide-and-seek with us. They would momentarily loom from the side ports, as we plunged past, spinning on their separate axes, sparkling in the sun like big gems.

Colorful, yes. So we thought the first few days, till one zoomed by so closely that our rocket blast actually touched it with spreading flame. We gasped, and felt sick at the thought of colliding head-on with one of the wandering nomads of the void.

Captain Atwell thereafter instituted a three-shift watch. In each watch, three men kept vigil. Two changed off at the telescope, peering ahead for unknown asteroids on our course. The third sat at the rocket controls, ready on instant's notice to apply off-side blasts.

It was well we did. Karsen suddenly tensed at the telescope, one day, during watch. Then he screamed, staggering back, and Parletti jumped to the telescope.

"Asteroid ahead!" he yelled. "Shift right—God!—hurry—"

At the controls, Tarnay promptly rammed over the off-side throttle. The rocket blasts shot the ship off obliquely, in a side-slip. The asteroid, a jagged lump of space-frozen rock a mile in diameter, lumbered past our nose with feet to spare.

ALL this was told to the rest of us by the three on watch, Parletti, Tarnay and Karsen. We had been asleep. We rushed from the bunkroom, rubbing our eyes, but only saw the asteroid as a dwindling body behind us. Captain Atwell gave Parletti and Tarnay a nod.

"Good work, men," he said. Then he slowly fastened his eyes on Karsen. "Was it you who screamed, Karsen? If Parletti hadn't been so quick—"

He left the thought unfinished. Karsen, in a panic, had failed to give the rocketman the proper information in time, and had nearly brought about our doom. It had to be split-second teamwork, with asteroid and ship moving miles a second.

Atwell finished tersely. "You are relieved from further watch, Karsen."

We all gave Karsen a rather pitying look. We could see she took it hard. She bit her lips and—oh, yes, it just occurs to me that I haven't explained about Karsen being a woman. We've taken it for granted, since we discovered that fact three months ago, at the start.

I'll resume later, about her. There is one more thing I want to mention about the asteroids.

Halloway says the asteroids are definitely linked with the mystery of the pyramids, but would not clarify himself. The statement excited us

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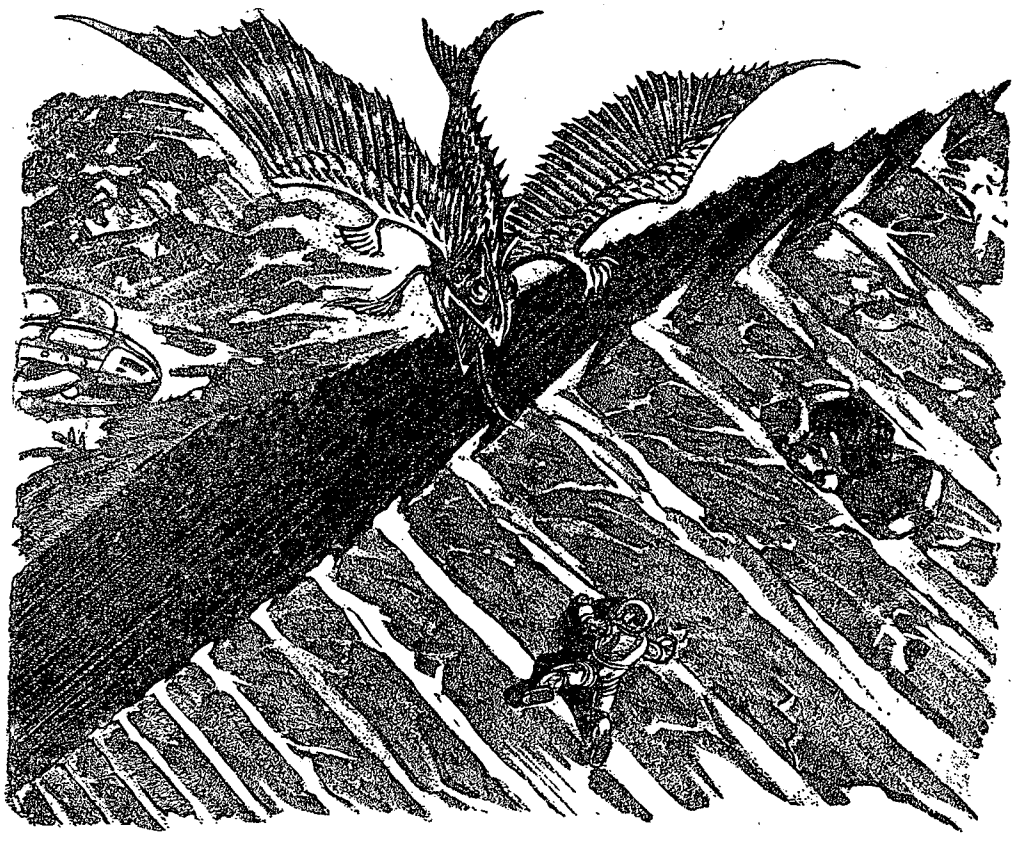
all. More than anything, on this expedition, we would like to come back with that enigma solved.

We've been reviewing what we know about the pyramids.

On the first of all expeditions into space, Mars Expedition Number One, there was found a pyramid. A pyramid so like the Egyptian pyramids possibly to Jupiter and the rest!

As for the *reason* why such structures should be on various worlds—that's anybody's guess, so far. Had the Martians built them only as time-lasting record crypts? Perhaps. But we feel, somehow, that they have a greater significance. That they represent a mighty achievement by the



We feared a monstrous bird-fish had attacked Halloway as he climbed the pyramid. (Chap. XIII)

of Earth that we could hardly believe our eyes. It meant either the Egyptians had been on Mars, or the ancient Martians had been on Earth. The latter is more plausible.

Then, the expeditions to Venus and Mercury found similar pyramids, and it was obvious that the extinct Martians had been to those planets. And Martians, involving all or most of the planets.

And so, on this expedition to Jupiter, we hope to find another link in the chain—and perhaps the key to the "Secret of the Pyramids." Well, time will tell.

To get back to Karsen.

First of all, Halloway, as you know,

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was the only official replacement among the ten men who had been to Mercury and back on our previous expedition. Robertson died on Earth, ironically, after braving the dangers of Mercury. Halloway replaced him, as official archeologist. His father, on Earth, has done monumental work in translating many of the pyramid records, and we think he deserves the honor of having his son along on this trip. Pyramids should be on Jupiter too.

Thus, young Halloway replaced the deceased Robertson. That left the other nine supposedly intact. Captain Atwell, Parletti, Markers and myself, veterans of all the previous expeditions into space—to Mars, Venus and Mercury. Von Zell, Ling, Tarnay, Swinerton, of the Mercury Expedition—and Lon Karsen.

But we have with us *Lonna* Karsen, sister of Lon Karsen! We wonder if you have discovered that on Earth.

WE found it out the third day from Earth. We had noticed that Karsen's voice seemed strained in a higher pitch, and he rarely spoke. Seemed to want to keep out of our way. We were too interested in the thrill of heading for Jupiter to take much notice at the time. Not even that Karsen mysteriously had two hands again, after having lost one on Venus! Sometimes those small things escape you.

The third day, on Gannymede, the cat jumped out of the bag. Or rather, the mouse ran from the larder. There was a feminine scream, and then we stared open-mouthed. Karsen was standing on a bunk, tugging at her space-jumpers, forgetting it was not a skirt. Tugging with *two* hands!

And so, for the first time, a mouse and a woman were in space. We don't know how the mouse crept in, with the food, but we trapped it later and killed it. We can't share our precious food, not even with a tiny mouse.

Karsen stared back at us—openly exposed for what she was. I think not a word was said for a full sixty seconds. Finally Captain Atwell, his face thunderclouds of anger, motioned her down.

"Explain!" he said in a cold, tight voice.

Lonna Karsen recovered herself and faced him with a defiant air.

"I'm Lon Karsen's twin sister, Lonna. Lon was never too well, as you know, after losing his hand on Venus, and then going through the Mercury Expedition. His health failed more after that, and he knew he couldn't go on this one. He would be a handicap. He was heartbroken. We talked it over and decided I should take his place, without saying anything. Our ancestors were pioneers. We have a name we're proud of—"

"Never mind all that," Atwell broke in furiously. "No place for sentiment here. This is an expedition to another planet—to unknown hardships and dangers. It's a man's game. *Real* men, at that. And now we have a woman with us—Lord! That's more of a handicap than Karsen could ever have been!"

Atwell thought seriously of turning around and bringing her back. Or packing her into our small emergency lifeboat and heading her back to Earth.

"You'll lose valuable time," Lonna herself reminded him. "Jupiter is nearest Earth now. It's heading toward aphelion. If you miss this chance, it will be twelve years before the next close opposition."

She went on steadily. "I ask no favors. Treat me as one of the men. It so happens that I've hunted lions in Africa, and flew a plane over the South Pole, solo. I can take it—well, except mice, maybe. But there won't be any mice on Ganymede, Captain."

Atwell gave in, finally. Jupiter takes twelve long years to swing around its huge orbit. And only at one point is that orbit closest to Earth. Each time Earth comes around the sun, toward Jupiter's side, Jupiter is millions of miles farther out.

If we missed this perihelion, we might miss getting there at all. A

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few million extra miles cannot be treated lightly, in space journeys. There are no gas stations in space, or grocery stores, when you run short.

THE rest of us shared Atwell's misgivings. But still, we admired her a little. Few women would have the courage even to step into a spaceship. She might, for all we knew, be as good a recruit as any of us. We gave her the benefit of the doubt.

But we knew why Atwell hesitated, mostly. Markers put it into words.

"Bosh, Captain! To coin a phrase, we're grizzled explorers, scientists. Story-writers would make a great fuss about this—nine men alone in space with a woman. But naturally we'll all remember—Karsen included, I'm sure—that our business is grim, important. Shake, Karsen!"

Lonna took his hairy paw gratefully. Thereafter we called her Karsen, quite sexlessly. We almost forgot the matter—till that scream she gave when the asteroid grazed us. She took Atwell's humiliating call-down without a word—like a man. Yet we wondered if we had made a mistake.

That finishes the incidents of the space trip.

My reports will be every other day hereafter, as it takes a tremendous amount of power to send etherline radio waves 400 million miles, and we can't afford to exhaust our reserves.

And now, we finally caught all your calls. We return greetings to Mars Expedition Number Three, Venus Expedition Two, Mercury Expedition Two, and Tycho Space Station! Thanks for your hearty wishes. Same to you.

CHAPTER II

Wonders of Jupiter

NINETY-FOURTH day.

We stepped out on Ganymede yesterday for the first time. Captain Atwell led the way, naturally. He had been the first human being to set foot on four worlds—Mars, Venus, Mercury and Ganymede. He deserves the honor. He set the Earth flag upright on its stand, looked around, and saluted as though welcoming Ganymede into the federation of worlds.

Chemist Von Zell had previously tested the air, to find it thin but breathable! And Ling, after thermometer readings, had announced the average as only forty below zero, Fahrenheit! Not worse than Earth's arctic regions. How such near-Earth conditions can be in effect, way out here in the Siberia of space, we didn't know at first.

We had expected a mean temperature of two hundred below, and no atmosphere to speak of. Naturally we're pleasantly surprised. We won't have to use the stuffy seal-suits.

We didn't stay out more than an hour, in the bitter cold. The next day, however, we hiked around a bit, bundled in heavy parkas, acclimating ourselves. The spot we've landed in is flat and snow-covered, like the steppes of Siberia. The snow is a light coating, though, hardly more than an inch. And it is crystallized water—not solidified methane or ammonia.

The long-range observations from Earth missed the presence of oxygen and water vapor on Ganymede, as they missed the oxygen in the cloud-packed air envelope of Venus. I think Earth astronomers have become used to having their pet theories exploded, by these direct expeditions.

Swinerton, biologist, has already accounted for the unexpected "heat." The surface of Ganymede, as far as we can see, seems to be covered by a uniform carpet of moss, under the sprinkled snow.

Thus Ganymede held three distinct surprises—breathable air, livable warmth and life. Swinerton makes the remark that "life either adapts to its environment, or adapts environment to itself." For instance, every bit of fertile ground on Earth was patiently manufactured from barren sand, by bacteria and plants.

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So with the "moss" of Ganymede. For it stores heat! Swinerton put a tuft in a bell jar, and in four hours it had raised the temperature ten degrees. Von Zell is making eager chemical tests. He suspects that instead of chlorophyll, the Ganymedian moss holds a strange compound that gathers heat. Thermo-synthesis, instead of photo-synthesis.

Thus the surface temperature of Ganymede averages a comparatively high minus forty, instead of minus two hundred. How many slow ages it took for this heat-gathering moss to spread and warm up the whole atmosphere, we can't guess. But how many unthinkable eons did it take Earth vegetation to convert hard rock and lifeless sand to the flowering fields we know today? Time makes all things possible.

At any rate, the moss thrills us. Swinerton calls it *"thermoss,"* cleverly. Each day it silently absorbs the sun's rays. Each night it radiates that heat, to keep away from itself life-congealing cold. The amount of heat given off, in thermal terms, must be untold trillions of calories. Tarnay already talks of transplanting the *thermoss* to Earth and achieving the sun-engine at last, by confining the heat thrown off and running steam engines with it.

As expected, there are other flora —trees, bushes, reeds, all apparently of the thermo-synthesis type. These are seen in the distance, with binoculars. Undoubtedly there is animal life, too, though we have observed none yet. The conditions, thanks to the therm-plants, are too akin to Earth to exclude fauna.

What will these animals be like? On Mars, the insectal-beasts. On Venus, the rampant carnivores. On Mercury, winged creatures. What will Ganymede have? The life-forms of a new planet or world are always its most fascinating feature—next to pyramids.

Ling has just measured the force of gravity. Point two-zero-seven, about one-fifth of Earth's—and comparable to Mercury's. It struck us suddenly that though we are on a satellite, it is actually larger than the planet Mercury! Ganymede's diameter is one hundred miles more than Mercury's three thousand-ten.

Thanks for the musical broadcast you relayed to us, Earth. We joined in some choruses, as we imagine they did on the expeditions at Mars, Venus, Mercury and the Moon. The voice of mankind spreading to the stars! We're glad to be part of this epic pioneering period.

The sun set today.

THERE was a noticeable lessening of light, though there can never be true night on this world. Jupiter hangs eternally in the sky, shedding a ruddy silver glow like a huge moon. Ganymede turns only one face to Jupiter, as the Moon to Earth and Mercury to the sun. We had landed on the Jupiter-lighted hemisphere.

It is a grand sight.

Great belted Jupiter hovers overhead constantly, shifting position among the stars, but staying the same distance above the horizon. Imagine, if you can, the Moon bloated to twenty times its diameter. In fact, it seemed to us the first few hours that it was falling toward us, bomblike, rapidly increasing in size.

Ganymede revolves about Jupiter in an Earth week, or seven days and four hours. Thus, for three and a half days the sun shines, and for three and a half days there is no sunlight. And then Jupiter comes out in all his glory, in the Ganymedian night firmament. Jupiter is so huge and near, and reflects so much sunlight, that we can easily read book-print under his rays!

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With the sun's glare away, dim though it was, the stars came out, too. Also five other of Jupiter's moons. On Mars, we had been privileged to see the strange phenomenon of two moons in the sky. But now we saw five. Io with a crescent, being nearer to Jupiter. Callisto beyond, like a big silver plate. And three of the small ones further out. Markers has the ship's telescope trained up, searching for possible new moons other than the known twelve.

Captain Atwell had us begin building an ice-house today, in which to take up quarters. With all the men working, we have already laid the foundation. The ice lies at hand, in huge boulders which we drag up and chisel into blocks. Karsen did her share; but Atwell watched her as she panted in the thin air, growing tired and cold.

"That's enough, Karsen," he said tersely. "Go in the ship and rest. No need to wear yourself out just trying to prove you're no handicap."

KARSEN'S eyes lit up fiercely in the Jupiter-glow. Shaking her head doggedly, she lugged another ice block to her shoulder—and collapsed. Atwell had me help her in, but even then she only rested on my arm.

As I left the bunkroom, I heard her sob in anger at her own weakness. She had tried to keep up with us, tried to fill her brother's shoes—but we men couldn't help treating her as someone we had to make allowances for.

By the way, Earth, we see you only as an evening star, for a few hours after sunset. Your orbit is so puny from this distance that, as we see it, you always hug the sun. Venus and Mercury are entirely lost in the sun's glare. If there happened to be any intelligent beings here, they would never know of the existence of Venus and Mercury, except by telescope and sun-filter.

Ninety-sixth day.

The ice-house proceeded rapidly yesterday until it now resembles an igloo. We are bringing the roof to a domed peak. Tarnay is the designer, having spent many years on Earth in the arctics among Eskimoes.

My reports will be briefer for the present, till this is completed. Atwell wants it done quickly as a permanent camp. He will then let the men pursue their various scientific studies.

Still in their off periods of rest, the men have managed to glean a few interesting data. Parletti, with his shovel and geology gadgets, finds Ganymedian soil almost devoid of heavy metals. No lead, zinc, silver, gold or radium. Even little iron. Mainly magnesium, aluminum, calcium silicates. But yet, Parletti says, Ganymede may some day attract a busy trade, for it has beryllium.

There will come the day, he predicts, when beryllium vies with iron as the most important metal, especially in an interplanetary economic boom. Beryllium-hulled spaceships, light and strong, are the coming thing.

Markers with his telescope is busily sweeping the Jovian skies for new moons or comets. Saturn's rings, by the way, are visible from here with the naked eye.

Ling watches his Geiger-counter avidly. It is ringing up cosmic rays like a cash register, but that is due to the air's thinness, he says. If the proportion comes out right, it will prove once and for all what Millikan, Compton and those early cosmologists theorized—that the cosmic rays come from outer space.

Von Zell analyzed the air more closely, and found its oxygen percentage high, almost twenty-five per cent. This, he says, is because Ganymede has probably never known a temperature as high as zero. Most chemical reactions take place above zero.

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Thus even active oxygen is inhibited, and stays free.

Swinerton is snapping pictures of animals in the distance with a telefoto lens, as Atwell won't yet let him range beyond camp.

HALLOWAY is like a bloodhound on a leash, wanting to search for pyramids. He made the cryptic remark that if we find a pyramid on Ganymede, the mystery of the Martian pyramids will be solved. Halloway is driving us wild with such statements. We plague him ceaselessly to tell us what he means, but he enjoys keeping us in the dark.

"We'll run across a pyramid sooner or later," Parletti said for all of us. "What a great day that will be—telling Earth the 'Secret of the Pyramids'!"

Only Karsen has nothing to do—except cook and keep the ship's cabin in order. Her work done, she once asked.

"What else can I do, Captain?"

"Nothing," Atwell replied. "Just keep out of our way."

Naturally he's gruff, with more important things on his mind. No danger has yet showed itself, but we are in an alien environment where anything may happen.

Ice-house nearly finished today.

We had to knock off work in the afternoon. A howling wind swept over the plains we are on, sending the thermometer down twenty more degrees. Parletti explains it as a "tidal wind" from Jupiter's enormous gravity-drag. That is, Jupiter's gravity causes regular "tides" in the atmosphere, as our Moon's gravity does in Earth's oceans. It "ebbed" in five hours, and soon the indefatigable *thermoss* had spread out its stored heat, and we went back to work.

An incident happened today.

One of the men—I won't name him—went back in the ship while the rest were working. Karsen was preparing a meal. We heard her muffled scream, and the man came out again, rubbing his cheek. There was no explanation from either one, but Captain Atwell alluded to it while we ate, later.

"Men, this is a scientific expedition of exploration. We expect to stay six months. Nothing must distract us from our studies and labors. *Nothing.*"

He was looking at Karsen. She quietly kept on serving, saying not a word. The incident is closed. I mention it only to show that, though human, men arise above natural impulses on occasions like this. For the man in question openly apologized to Karsen, took the blame and eased the tension in the air. Even Atwell smiled in dismissal of the matter.

Attention, Earth astronomers!

Markers has just discovered, not one, but two new moons of Jupiter! This brings the total to fourteen, and confirms his tentative discovery of them from Mars, on that expedition. We clapped Markers on the back and toasted him with hot coffee.

Somehow, it seems a fitting thing, since our ship is named the *Galileo*. Galileo, in 1610, discovered the four big moons of Jupiter, and thereby launched the science of astronomy on its modern phase. Other Jovian satellites were observed, three as recently as 1936 and 1998, but none since then.

Markers now has the distinction of having discovered three new moons invisible from Earth in even the best telescopes. Mercury's moon, and these two of Jupiter.

"One moon behind Galileo," he mumbled, turning his tube on Saturn in hope. "But don't worry—I'll pass him yet."

CHAPTER III

Where Are the Pyramids?

NINETY-EIGHTH day.

Ice-house finished yesterday, and we moved in. It is large, roomy and a perfect protection from the icy winds outside. With one seleno-cell heating unit going in the center, it is comfortably warm. As with Eskimo igloos, we don't have to worry about the walls melting down. The outside

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cold counteracts the inner heat, in the wall itself.

Now we are more or less permanently established on Ganymede, for our six-month stay. Atwell says he will organize a short exploration tomorrow, beyond sight of our ship for the first time.

The sun rose again today, after our "night" of three and a half Earth days. It was an inspiring sight—the small yellow globe-star rising slowly as though bewildered from having lost its way. It lighted up the widespread plains of green moss with its tuft of never-melting snow. The phenomenon of double shadows again intrigued us—those of the sun and Jupiter.

Huge Jupiter seemed to glare in annoyance, with its Red Spot eye, at this rival so much smaller but still brighter. Somehow, this scene out here in the deeps of space is—well, lovely. Mars was flat, drab desert. Venus was stifling fog. Mercury was harsh glare.

Yes, Ganymede out here, with its white and green and multiple moons, and its magnificent Jupiter-orb, is sheerly beautiful. All of us have at times expressed the same opinion, if you can imagine hard-bitten explorer-scientists softening for a moment or two.

Parletti is doctoring Tarnay for severe frostbite. One of his toes froze, and Parletti had to amputate. Tarnay is doing well, but will be laid up for a week. Atwell warned us to watch for numbness, whenever outside. In this biting, relentless cold, it creeps up on you unawares.

But we're pretty well acclimated, with red skins and leathery hands and face. If transported suddenly to temperate climate, we'd probably wither in the "heat."

Hello, Mercury Expedition Two! Received your signal, relayed from Earth. Strange, isn't it—you sweltering in heat and cursing the sun only thirty million miles away. We're 500 million miles away, and feel almost like worshipping the sun when it rises.

Our routine continues.

Captain Atwell made a short exploration today, with Swinerton, Ling and Halloway. Armed with rifles, and carrying emergency knapsacks of rations, they hiked ten miles and came back in a wide circle.

Nothing eventful happened. Ganymede seems to be a quiet, unmenacing world. Yet Captain Atwell appeared thoughtful. We had met unexpected dangers on Mars, Venus and Mercury. Why should Ganymede be an exception?

Swinerton reported his *thermoss* in all directions, proving his theory that it is a fundamental vegetation, like grass on Earth. Also deer-like animals, hiding in groves of stunted tree-growths. To our wondering question, he shook his head.

"No, I doubt there are intelligent beings. Intelligence rose in warm, kind climates on Earth. Here life struggles fiercely against a rigorous environment. Life has only a toehold in this outpost of the solar system."

In fact, we hadn't expected any at all, so far from the life-giving sun.

LING had little to say, in his Oriental way, except that we had better wear snow-goggles in any future prolonged wanderings over the snow, against blinding glare. The faraway sun sheds only one twenty-fifth the light it does on Earth, but the crisp, clean snow throws it back in the eyes harshly. We had been squinting right along.

Halloway was most excited—or impatient.

"No pyramids in sight," he said disappointedly. "There must be some. There simply must, or my father's theory is smashed. Captain, let me take the lifeboat and scout a few hundred miles."

Atwell refused. "The lifeboat is only for emergency."

"But the mystery of the pyramids—"

"The pyramids be damned!"

But we knew Atwell didn't really mean it. As much as any of us, or anyone on Earth, he would give his right arm to know that secret. The pyramids had haunted us on every planet we visited, a silent, mocking

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symbol of a past race and a past saga.

Yes, Atwell would give his right arm, but not a life—or ten lives. As leader, it was his grave responsibility to keep us from danger. The lifeboat, a new item on this expedition, was an ace-in-the-hole that could not be used for any purpose, except to avert catastrophe.

Halloway, on his first interplanetary expedition, and a little new to Atwell's adamant nature, tried to remonstrate. The rest of us held our breaths. Atwell eyed him fixedly.

"That's enough, Mr. Halloway," he said quietly—oh, so quietly. "Your life is in my keeping. I'll save it against all odds. But I'd *take* it if it meant other lives spared. Is that clear?"

Inevitably, he shifted his glance to Karsen. Atwell could not resist warning her, at every opportunity. If this sounds heartless, remember that on every other expedition Atwell placed lives above feelings — and brought every expedition back.

We celebrated the Fourth of July today, in the most un-Fourth of July setting imaginable—snow, cold and ice. Captain Atwell allowed us to fire three rifle salutes into the air. They made quite a rousing report, even in this thin air. Ling informed us that the high-powered bullets, with a muzzle velocity of better than three miles a second, would never come back. They had exceeded the escape-velocity of Ganymede's light gravity. Heaven knows where the bullets will end up, as we fired in the general direction of Sirius.

One-hundredth day.

Sun sinking again. Nearly lost a man. A tidal storm suddenly struck, without warning. One minute it was clear. The next, a wall of wind-blown snow thundered across the plain and engulfed us. We were in no danger, either in the metal-walled ship or sturdy ice-house.

But Von Zell had just been crossing from one to the other. A distance of only a hundred yards. This may sound unbelievable, but he lost his way! The thick, swirling snow completely obscured his vision. And the accompanying winds, howling like demons, blew him sideward so that he lost all sense of direction.

KARSEN, Halloway and Atwell saw this from the ship. Halloway started right out to rescue Von Zell. Captain Atwell held him back.

"Stay here! He's in danger, but one life lost is better than two. You couldn't go a foot without losing your way too."

White-faced, Halloway and Karsen were forced to watch as the full fury of the storm buffeted the staggering Von Zell away. Not until five hours later did the wind die down and the air clear.

Von Zell was huddled only fifty feet away, almost buried in snow. Intelligently, he had thrown himself down and not attempted to find the ship. He had a thorough chill and is now in bed; but curiously enough, he was not frostbitten. The snow had acted as a blanket and protected him from freezing.

We quickly forgot the near tragedy. Danger is ever quick to strike, on these expeditions, and we had learned how to forget.

As though to compensate, sunset came, and the night firmament spangled out in its full glory—mighty, banded Jupiter, the stars, and eight moons. To top it off, Markers just made an astounding discovery. One of those moons is not a moon of Jupiter. It is a moon of Ganymede!

Markers is working out its complete orbit and data. Tentatively, it revolves around Ganymede in about nine hours, at a distance of five to seven thousand miles. Its diameter is small, perhaps ten miles, much too tiny to be seen from Earth.

"Shades of Galileo!" Swinerton said when Markers made his announcement. "Galileo first discovered that other planets have moons, besides Earth. In turn, you've first proved that a moon can have a moon!"

It's unprecedented in the annals of astronomy. We're rather proud to make the discovery.

I might add Parletti's jocular remark.

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Captain Atwell held Halloway back as he rushed out to rescue Von Zell from the tidal storm. (Chap. III)

"Look sharp, Markers," he grinned. "Maybe you'll find a moon of *that* moon—and so on!"

We caught some sleep. We feel a little safer now about the storms like that of yesterday. Ling and Tarnay have figured out the manner and time in which these periodical tidal monsoons occur. Jupiter's huge fist of gravity steadily bunches warmer air on the hemisphere he lights. When the sun sets, the drop in temperature chills this air, making it denser. It drops, or charges down, causing the violent typhoon. But by the unchanging laws like those governing the tides of Earth, the storms can occur only near sunset. The rest of the time is comparatively safe.

Accordingly, Captain Atwell led another exploration beyond camp, with Swinerton and Parletti. It was at night, but they could see under Jupiter-light almost as well as sunlight. They trekked twenty miles this time, finding low hills up which they clambered. From here they had an extended view of the plains. It was all the same, quite arctic in general.

"No pyramids in view?" Halloway asked. He had been left behind by Atwell as a matter of discipline, we suspect. Atwell shook his head, and

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Halloway lapsed back into a sort of brooding.

"Don't take it so hard," Atwell said more kindly. "The pyramids will show up eventually, when we organize longer trips."

We're all taking it hard, though. As much as Halloway, we hoped to find a pyramid.

IRONICALLY, a pyramid had been found—but on Callisto. Parletti had been taking enlarged photographs of Callisto's surface, the next nearest moon outward from Jupiter. Scanning one print with a magnifying glass for geological data, he noticed a triangular dot. He pointed it out to us excitedly, and we all agreed it could be only a pyramid, after due scaling down. No mountain or natural formation could have this perfect symmetry.

"A pyramid on Callisto?" Halloway said eagerly. Then his face fell. "There, of all places," he groaned. "Thousands of miles away, out of reach. If I could just examine it, I'd have the answer to the Martian mystery!"

After that, he seemed to brood more. Halloway is the youngest of us, and the most eager, impatient. It is hitting him hardest that the great secret of the pyramids is dangling just out of reach. His father, on Earth, has done a fine piece of research, translating many of the crypt records brought back from Mars, Venus and Mercury. But we understand he depends on his son to bring back from Jupiter the final piece in the jigsaw puzzle.

In connection with that, thanks for the special program in our honor given by the Pyramids Clubs on Earth. We can hardly believe that since we left Earth, hundreds of such clubs have sprung up, all plugging for us to bring back the "Secret of the Pyramids." We can only say we'll try our best.

Nothing of event to report.

Except that Markers, in collaboration with Parletti and his camera, has turned his attention to Jupiter itself. They've observed and listed the bands, which are separately rotating rings of thick gases. For instance, the so-called Southern Belt, creamy brown in color, rotates in something over ten hours. The Red Belt near the equator, crimson in hue, rotates in *less* than ten hours. The mean is the value astronomers on Earth have used for the rotation of the planet—nine hours, fifty-five minutes.

Parletti and Markers now give the true value—nine hours and fifty-seven minutes. This difference of two minutes means an equatorial speed one thousand miles an hour slower. The same error applied to Earth's rotation would mean that astronomers on Jupiter would say:

"Earth either rotates one thousand miles an hour, or not at all!"

This illustrates, to some extent, the gigantic scale of all things pertaining to Jupiter. Here are some more items. Jupiter's atmosphere is six thousand miles thick—almost Earth's total diameter. It seems to be mainly a hell-brew of methane, free bromine, ammonia, and dust raised by what must be the most violent storms in the universe.

More data next time.

CHAPTER IV

Man Lost!

ONE-HUNDRED-SECOND day. Something has happened. *Halloway is missing!*

Here are the circumstances. This morning, ten hours ago, Halloway asked for permission to scout a mile or so in a direction where fairly tall trees grow. If he could climb one, he'd have an extended view in a new direction. He promised to take no chances, and be back in three hours. Atwell agreed, since it seemed a harmless request, so close to camp. And it might relieve Halloway's nervous state. He left just at the new dawn.

Halloway didn't return on time. Atwell instantly sent a search party. His tracks in the snow ended at the forest, and from there on were untraceable.

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No blood was found, no torn clothing, no clue as to his fate. He had just vanished.

All this day, search parties of two each have gone in all directions from the trees, hoping to pick up his trail. There is not a trace of Halloway or his footprints.

We are all depressed. Despite his impetuous nature, we've all liked him. Has he foolishly set out, on foot, to find a pyramid, destination unknown? He carried a week's knapsack of rations.

Well, with nothing to report on that, I'll give some more data about Jupiter. Due to its rapid rotation, the equatorial bulge is enormous, and the flattening of the poles amounts to eight thousand miles—the diameter of Earth! Also—

Stand by!

Resuming. There has just occurred something that may explain Halloway's disappearance.

"Young fool," Atwell said, when Ling and Tarnay returned, reporting no sign of Halloway yet in the direction they had searched. "Did he have the sheer stupidity to go off looking for a pyramid himself?"

Karsen was suddenly facing Captain Atwell, her face strained. She had begged him to let her help search, but he had refused.

"It wasn't the pyramid, Captain," she said in a low voice. "It was I! I didn't want to say anything before, but Halloway had been paying me attentions whenever we were alone. For days! I tried to tell him I was just Karsen—a member of the expedition, nothing more. He kept on. And he —brooded. I think, Captain, that he went away because of me!"

We were all stunned. Then the pieces slipped in place. It had been Halloway, by the way, who stumbled from the ship that day, rubbing his cheek—from Karsen's stinging slap. And his brooding—well, some of us suspected it might not be wholly the pyramid. In a way, Halloway couldn't be blamed. His first trip in space, a quite pretty girl—

We all glared at Karsen. Atwell slowly turned his eyes on her balefully. It took courage for Karsen to speak up, we all admit. For if Halloway never showed up again, we would all have thought he went off in search of a pyramid. But that didn't lessen her blame. Her very presence on our expedition, a woman, was a gamble with human emotions.

"You've driven him away," Atwell snapped. "Driven him mad. I knew you would bring disaster, one way or another, Karsen. I knew it! For the safety of my expedition, I should have taken you that first day and—"

HIS fingers were clenching and unclenching. We almost expected Atwell to leap at her. But he turned away.

"Ling, Tarnay!" he barked. "One hour's rest. Then off you go again. Gillway, leave that damned radio and get back on the job. Still a chance to find him. Karsen, get into your parka outfit. You're going on a search now. With me."

It's hard to explain what Karsen's part in this affair means. The loss of a life, perhaps. But more—the shattering of morale. We don't know at what future moment another of us may be seized with a madness centered about Karsen. We are after all men first, scientists second. We are not all altruism, reason, high-minded pioneering. That is the plain fact, no matter how disillusioning.

That's all for now.

One-hundred-fourth day.

Halloway is back! But Karsen is gone!

Von Zell and Swinerton found Halloway yesterday, stumbling around in the snow, not five miles from camp. They carried him back, and Parletti doctored him up. Frostbite of left hand and both feet, but he won't lose any fingers or toes. He kept moving enough for sluggish circulation. Young strong body.

It's a rather strange story. Halloway had nothing else in mind except to climb a tree, as he said. But on the way there, it was east, against the rising sun. He had no dark goggles along. He went snow-blind, and after that just wandered helplessly, lost.

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"Snow-blind!" Atwell echoed dazedly. "That was all? You didn't go off searching for a pyramid? You didn't run away from Lonna Karsen?"

"Pyramid? Run away from—" Halloway's face looked puzzled. "What's Karsen got to do with this? Yes, I admit I was a fool over her, for a while. But she put me in my place. I got over it. That's girl's grand. Didn't leave any hurt; didn't blab, or get me in trouble. Grand girl. Where is she?"

Yes, where was she? She was not with us!

Atwell turned a little gray.

"She came in with me, an hour ago, both of us dog-tired from the all-night search. She must have slipped right out again—to search some more!"

Ling stooped and held up a pair of snow-glasses.

"She dropped them! She's out there now—*without glasses*—"

It was funny, the way we all jerked up. We were all haggard from twenty-four hours of tramping without sleep. Now we all pretended to be fresh as daisies, ready for the new search. We had done Karsen a great wrong.

Well, we're still searching for her. The men are snatching an hour's sleep, in shifts, and then going out again. We're going to find Karsen, or the rest of the expedition will be a process of one taking turns to kick the other. We all looked down on her, and she swallowed it all along—like a man.

CHAPTER V

Parade of the Eclipses

HELLO, Earth!

Jupiter Expedition Number One resuming contact, after two months, Gillway at the keys. One-hundred-sixty-third day since leaving Earth.

The reason for the long delay of two months is that I ran out of charged batteries. My seleno-cells depend on sunlight for recharging, and sunlight from 500 million miles away is too weak to keep them up. Briefly, Tarnay helped me solve the problem by suggesting I use Jupiter-light. It worked. While the sun is away for our three-and-a-half-days long "nights", I left the cells out under Jupiter-shine. Jupiter is so huge it reflects enough sunlight to make up the difference in my recharging. That is, Jupiter-light *plus* sunlight keeps the charging rate up.

Now to tell of ourselves.

First of all, Lonna Karsen was found four miles from camp, blind and weak, staggering in circles. Parletti brought her back to health. The snow-blindness left, in both her and Halloway. It was only a temporary affliction, as the sun's glare is not what it is on Earth, luckily.

We were overjoyed at Karsen's safe return. She is accepted now as one of us. No man could carry her share better in this expedition. We think Lon Karsen, back on Earth, will be glad to know that through her he is still with us.

Thus, what seemed a near disaster turned out to be a new spirit of unity and morale among us. We'll need morale now. Something else has happened. We are threatened in a different way—all ten of us. To explain, I'll have to go back to previous events. If I mis-code a word here and there, please excuse it. I'm having trouble punching the keys of the etherline code-transmitter. My fingers—

I'd better start from the beginning.

Life on Ganymede is of a very strange sort. Swinerton, as biologist, soon came to that viewpoint. To illustrate, he went hunting in the nearest forest, bagging a furred, hooved, antlered creature about the size of a dog. Call it a dwarf deer. This was in the night-period, under Jupiter-light.

In the next day-period, he shot another, seemingly of a different species. For it was larger, more heavily furred, and had thicker horns. But there was no sign of the former type, in the herds he saw.

A few days later he bagged another of these strange dwarf-deer. This one was only about half as big, with lesser horns and coarser fur. And

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again the former "species" was mysteriously gone.

What did it mean?

This, of course, was only one type of creature. In the course of weeks Swinerton observed, and at times shot for study, animals of all sorts. They resembled, for purposes of clarity, foxes, rabbits, rats, bears, etc. Yet invariably, he never found two exactly alike! Amazing? I'll amaze you more as I go on, but enough of that now.

Incidentally, we haven't solved the "Secret of the Pyramids" yet. In fact, we haven't even found a single pyramid. We know it's a disappointment to you, Earth, as well as us. Circumstances, however, have not given us the opportunity.

To get back to everyday matters.

Temperature shot up to twenty below today. It seemed almost warm to us, having been used to an average of forty below. The variation is from seventy below to ten below—a range of sixty degrees. That's as much, relatively speaking, as the difference between winter and summer on Earth. So don't imagine Ganymede as a uniformly cold, bitter stretch of Siberia.

IN ITS own way, Ganymedian climate is as varied as Earth's. To humans, anything below zero is just plain cold. Ten below is as cold as seventy below, because we're insensitive to that particular range of temperature. But obviously to the Ganymedian creatures, ten below is "hot" and seventy below is "cold." Somewhere in between, probably at minus forty, the climate is "temperate."

Try to understand that, as otherwise you won't get what follows.

Ganymede's winter and summer are really its day and night. For the variations swing back and forth with every rising and setting of the sun. Thus its seasonal "year" is just one Earth week long!

I'll let that stand for the time being, and tell of other things.

Jupiter and its moon system are a celestial wonderland. The daily eclipses, for one thing. With fourteen moons circling around the primary, they eclipse each other steadily. Or they eclipse the sun. Or Jupiter eclipses them, as they ride into its huge shadow. Or they transit across Jupiter's face.

Markers nearly went wild one day, trying to record every phase of these jumbled motions.

First, Callisto, the next nearest moon outward from Jupiter, eclipsed the sun at sunrise. Or rather, it just blotted the sun out, being much larger.

Then, Jupiter eclipsed the sun, as it does *daily* for us. Like a bright diamond, the tiny sun slipped behind one edge of the colossal bulk of Jupiter, reappearing at the other edge hours later. Jupiter is so big that the sun never gets by without being eclipsed.

While this was going on, Europa passed between us and Jupiter, transsiting across its luminous face as a small black circle. Or, as Von Zell put it jocularly:

"Look at Europa eclipsing Jupiter! It's like a fly trying to block out the form of an elephant!"

Soon after, Io swung in its orbit behind Jupiter, which is most properly called an occultation, rather than eclipse This was exceptionally interesting, in that Jupiter's mighty cone-shaped shadow was oblique from us, the sun being to the side. Thus the orb of Io, while it was yet far from Jupiter's edge, fell into its penumbra, fading to a dull copper.

Then it plunged into the true shadow, barely visible. Finally it seemed to crawl behind Jupiter's actual bulk, resignedly. It popped out in full radiance from the other side, hours later, like a scampering mouse.

How's that for a day's sightseeing, up in our sky? But there's more!

Two of the small outer moons occulted each other, looking to us as though they collided, or passed through each other. Then the ninth outer moon, a retrograde one, darted backward across the sky and eclipsed the sun in passing.

The eighth moon, also retrograde, had two phases. One was half-phase, from Jupiter's light at the side. The other was crescent, from the sun's light in the other direction. Both phases were clearly distinguishable

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in our telescope. Earth's Moon, of course, has Earth-phases too, but too weak to vie with the strong phases of the sun. Here, Jupiter-shine is strong enough to compete with a weaker, more distant sun.

FINALLY, Ganymede's own shadow, as the sun set, arched across Jupiter's face as a black patch. This has been seen from Earth through telescopes. But you can't imagine the sheer wonder of it as you see it from up close—the shadow-blot rippling and dancing along over Jupiter's varicolored bands of atmosphere.

The whole thing was like a planetarium show, but with the added magnificence of reality.

That was an exceptional day for celestial antics among Jupiter's fourteen moons. But still, we have daily at least one eclipse, or occultation, or transit, or something. By now, we hardly notice. 'So quickly does familiarity dull things!

Here's a curious fact. Jupiter's fourteenth and outermost moon is twenty-nine million miles away, so far that it is invisible to the naked eye from here! Markers discovered it with the telescope. Without that instrument, that moon is only an eighth magnitude star.

Hello, Mars Expedition Three! You'll probably think your view of two moons is nothing, after hearing of our fourteen. But think of all the people on Earth who will never be privileged to see more than *one!*

CHAPTER VI

Super-evolution

ONE-HUNDRED-SIXTY-FIFTH day.

The periodic tidal monsoon, from Jupiter's frightful gravity-drag, this morning stove in part of our ice-house's east wall. No one hurt, although a block of jagged ice crunched within an inch of Ling. Atwell set us to work repairing as soon as the storm died. In this light gravity, we can work all day without tiring. We'll finish repairs tomorrow.

To tell something of what the men have been doing, in the past two months, Halloway has been biting his nails over not finding a pyramid in the vicinity. He has trekked as far as three hundred miles in four directions without success. He says he will positively solve the Martian pyramid mystery if he finds one. He examines Parletti's photos of Callisto at times, which shows a pyramid there as a dot, but it doesn't help much.

Tarnay and Ling, in collaboration, have taken some of the *thermoss* that grows universally, and produced steam with it. The *thermoss* is pressed into a cylinder with a water valve. The heat released by these remarkable growths raises a head of steam. More practically, they have diverted the steam into a small electric generator, and wired the ice-house for electricity. All the comforts of home here!

Von Zell is listing, as he did on Mercury, all the metal ores hereabouts. He found a deposit of beryllium ore, as a sulfide, that if exploited would make any Earth concern rich. We sometimes wonder how Earth will handle the problem of ore concessions on other planets, when this exploration phase passes into the commercial.

Parletti and Markers have much to report about Jupiter itself. I'll get at that soon.

And, most important, Swinerton and his super-evolution. That's the term he's applied to life here on Ganymede. His theory is that in this rigorous, harsh environment, Nature has had to step up evolution in order to permit any survival at all.

Karsen, by the way, has turned out to be not only an excellent cook and housekeeper, but a skilful candid-camera operator. She brought along one of those new depth-and-color gadgets, with which she is taking a faithful human record of our activities. She develops the film herself, and is displaying many prize shots. One shows all of us staring in the sky open-mouthed as two eclipses occurred at once. It demonstrates better than any-

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thing how astounding these sights are, in a multiple-moon system.

Also she happened to snap a laughable view of Von Zell skidding on his haunches on ice, with his dignity completely absent. Von Zell wants to destroy the negative, but Karsen has hidden it. Von Zell even offered to wash dishes a week straight!

But it's hard to be light-hearted, with what hangs over us. Swinerton's super-evolution may mean doom to us—

Thanks for your musical broadcasts, Earth, which help to make Earth seem nearer, instead of an appalling 500 million miles away.

But to get back to cases.

Swinerton, in the past two months, studied his mystery closely. After prolonged observations of animal life, he came to the conclusion that no species lasted more than one generation. It mutated to another form, or several forms, most of which instantly died out. The few survivors, one jump ahead of extinction, mutated again.

IN OTHER words, Nature is desperately trying to come up with species that will thrive—and hasn't succeeded. We can't think of any Earth species that would survive here, let alone *thrive;* not even the penguin or arctic fox. We man-animals survive only because we brought our own food and warmth. Thrust out barehanded, we wouldn't last a week.

Swinerton seems to be logical, though we find it hard to follow all his reasoning. On Earth, taking a comprehensive viewpoint, evolution is slow because it has no need to hurry. Life is easy on Earth—except for the bitter struggle between species. On Ganymede, the struggle is against the greatest enemy of all—environment.

So, up here, evolution is incredibly accelerated. Thick fur becomes thicker, against the cold. Horns become lighter to balance the added weight. Hooves become harder to scratch out food from under the snow.

But then—bingo! something goes wrong. The teeth are too soft, because all the calcium goes into heavier bones, and the species starves to extinction. Its child has stronger teeth, but softer hooves. The grandchild has strong teeth and good bones—but an overtaxed heart. And so it goes, always short of the rigid perfection needed in this elemental, raw world.

It's tragic, Swinerton says. Life got a toehold out in this bleak, bitter outpost, but still after untold ages has no more than that. And evolution, discarding species right and left, strives madly to find life-forms that will defy all the elements.

It's saddening. Swinerton once found a whole herd of the deer-creatures frozen stiff. A slight drop in temperature had chilled their moss-food to inedibility, for miles around. They starved and froze on their feet, in a few hours. Such is the grim tempo of life in the strange, swift winter and summer-below-zero in which these animals must exist.

We feel like misplaced beings here. Like silicon-men visiting Earth from a hot planet, who would think liquid water was a phenomenon of cold. To them, all temperatures below the boiling point would seem frigidity. They would not understand that because we had a bad summer, food would be scarce; for to them it would amount to a few more degrees of cold, down where it didn't matter anyway.

We wish Swinerton hadn't found that frozen herd. For he brought some back, and we ate them, having a desire for fresh meat. Von Zell reported no dangerous elements in the meat—but there must have been at least one. The hormone that promoted the super-evolution!

Greetings, Venus Expedition Two! We understand you're in trouble too—losing a man to the mold-death, and most of you sick. But we'll win out, both of us. Can't keep a good expedition down!

One-hundred-sixty-seventh day.

Things are not going so well. To clarify our predicament—the hormone of speedup evolution is working in us!

Swinerton brought back his deer-meat a month ago. Karsen prepared it as sizzling steaks, and we all ate heartily. It was tangy, soft and altogether delicious.

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"Fine," Captain Atwell said, as I recall. "There's nothing like fresh, hot food in a cold climate. It will keep us pepped up."

WITHIN a week, the first signs appeared. Markers fumbled with the opinions of his telescope, and complained of his fingers "feeling thicker." Tarnay, our barber, commented that we all seemed to need haircuts sooner this time. When he cut our hair, it was coarser, dulling his shears.

Small signs, but they began to add up to an ominous dénouement.

We didn't really suspect the worst till our fingernails and toenails began to bulge and harden. Atwell worriedly asked Parletti, our doctor, for an explanation.

"Acromegaly," Parletti hazarded. "Thickening of features and joints. But why should it hit all of us at once? It's a glandular disturbance."

"Our food," Ling put in. "We all eat the same thing."

"Food!"

It was at this point that it struck Swinerton.

He went on excitedly.

"Inhibition of our glands, by a hormone from the deer-meat. This is amazing! There is a hormone in Ganydmedian flesh that speeds up metabolism, adapting the organism to coldness. It attempts to adapt dermal organs to the environment. Amazing!"

"Talk sense," Atwell demanded. "What's happening to us?"

"Our hair is thickening, to protect us from the cold," Swinerton went on. "Our nails are attempting to become —well, hooves!"

We all gasped.

"Don't be worried," Swinerton admonished. "The hormone will lose its potency. We won't eat any more Ganymedian meat, though, or it would keep on. We've temporarily been guinea-pigs for a new and startling hormone I never dreamed could exist!"

But Swinerton was worried himself, a week later. We threw out the deer-meat, but still the process went on. Our lips now began to thicken, and our eyelids puffed with fatty tissue. Daily we had to cut our nails and hair. The hair on our arms and legs, too, began to come out like light fur.

"It's not a hormone, Swinerton," Von Zell said one day, with his chemical knowledge. "It's an enzyme. And an enzyme renews itself in the bloodstream, where a hormone would be eliminated!"

Swinerton agreed, with a grave nod. The rest of us didn't understand, so Swinerton explained.

"Our normal glands project hormones into the bloodstream. They have to be constantly renewed, to regulate metabolism. But Ganymedian life works on the enzyme principle. The enzyme is manufactured in the bloodstream itself. Once started, it renews itself. It's something like the germs of a disease getting a foothold, and then gaining strength. Ganymedian life is saturated with the 'disease' of super-evolution!"

He went on solemnly. "This enzyme's function is to adapt metabolism to Ganymedian conditions. Not to *any* conditions, but just Ganymedian environment. Thus, even though we really live mostly under Earth conditions in our heated rooms, the enzyme goes on adapting us to Ganymede.

"Once it gets in, it's like a poison or disease that works its course adamantly, inexorably!"

I HARDLY know how to resume.

A month ago the affliction struck us. Today, if you saw us, you would probably turn in horror. The hair on our heads is a coarse, thick matting that persists in dangling before our eyes.

Our eyes are mere slits between puffy lids. Our lips are thick and impede speech. Our fingers are so thick we can hardly wiggle them. Horn toenails are spreading around our toes. A fine fur covers our body and is thickening.

Yes, it's nightmarish. And, I suppose, unbelievable. But there have been people on Earth suddenly gaining weight and changing form, in a month's time. Our tissue is redistributing.

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It's simply a matter of metabolism, induced by the hellish enzyme of super-evolution.

What will we become?

As Swinerton puts it, our bodies are adapting themselves to the environment, willy-nilly. Our outer skin is thickening, adding fur, making ready to defy the elements. If it keeps on, we'll be wilder in appearance than any sub-men of Earth's past. Karsen doesn't take pictures of us any more—nor does she look in her hand-mirror.

Perhaps you wonder when the first signs of the horrible business appeared, why we didn't leave instantly for Earth. Swinerton and Von Zell both said "no." We'd keep on changing all through the three-month space journey, and end up as terrible monstrosities.

INSTEAD of "changing," Swinerton used the word "mutating." He bit his lip over the slip, but we forced him to explain.

"We're actually mutating," he said. "Evolving into something else. All these creatures on Ganymede change a little daily. Human beings change from generation to generation, too, imperceptibly. Here on Ganymede, evolution is working all the time—every hour and second!"

"Maybe Earth doctors can help us," Parletti suggested. "Perhaps they have a remedy for our predicament."

"For every poison," Swinerton said, "there is an antidote. The antidote will be here on Ganymede, not Earth. It's our only hope."

In short—we're marooned on Ganymede!

If the evolutionary process isn't stopped, we'll end up as Ganymedian life-forms, unable ever to return to Earth!

Well, that's the situation at this time.

Hello, Mercury Expedition Two! Sorry to hear of your trouble—a metal hailstorm laying up three men with bad bruises.

Seems the planets are being ornery to all Earth expeditions at this particular time.

CHAPTER VII

Race Against Mutation

ONE-HUNDRED-SIXTY-NINTH day.

We've been searching for the antidote for three weeks. Swinerton and a staff of helpers set traps and captured a dozen kinds of small animals alive. Swinerton is using his microscope on their blood, seeking a clue to the enzyme and possible antidote.

One of the creatures, paradoxically, has helped to raise our spirits. It is a sort of monkey-thing with horns and hind hooves, but quite monkeylike hands. A clever, noisy, active little thing that jumps around and amuses us. We've adopted it as a pet. Karsen named it Impy, because of its horns.

No results so far, though Swinerton, Von Zell and Parletti work long hours over their cultures and solutions. The rest of us, unskilled in the test-tube line, can do nothing except stand around helplessly and wait.

Still, despite our predicament, it thrills us to realize what hallowed ground—or space—the Jupiter system is. It lifts us above our personal problem.

Galileo, first. In 1610, by first turning a telescope on Jupiter and seeing its four largest moons, Galileo proved unshakably the Copernican theory of orbits, and thus launched modern astronomy upon its course.

Point Two. Roemer was inspired, in 1675, into first measuring the speed of light, by observing that the eclipses of Jupiter's moons were One thousand seconds late when viewed from opposite sides of Earth's orbit. He took observations six months apart, in other words.

Thus, since the diameter of Earth's orbit was approximately 186,000,000 miles, light took one thousand seconds to traverse that distance. Therefore, by simple division, the speed of light was computed to be 186,000 miles per second.

Point Three. Jupiter is the largest

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planet, larger than all the others lumped together.

Point Four. Jupiter has the most moons, several ahead of its nearest rival, Saturn.

Point Five. Jupiter carries with it the largest satellite in the solar system, larger than the planet Mercury. Namely, Ganymede.

Point Six. Jupiter's innermost moon is the fastest known, revolving in twelve hours, with an orbital speed of one thousand miles per minute.

Point Seven. Jupiter rotates faster than any other planet, and therefore has the shortest day, ten hours, and the highest equatorial speed, 28,000 miles per hour. (Compare Earth—one thousand miles an hour.)

Point Eight. Jupiter has a comet family numbering about fifty—comets which reach Jupiter and can't get past and so bend back to the sun, shuttling between those two bodies. Saturn and the outer planets combined have less than half that many controlled comets. Also numerous meteor swarms obey Jupiter's dictates.

Point Nine. Jupiter is unique in having the Trojan Asteroids in his orbit, having pulled them from the other asteroids. Far enough around the other side of the orbit to keep from being drawn in as Jovian Moons, they are still forced to trail after Jupiter age after age.

Point Ten. Discovered by this expedition, Jupiter has a grandchild moon, revolving around Ganymede.

So, on those ten counts, Jupiter is certainly the most outstanding planet in the solar system.

WE WERE treated to a unique celestial phenomenon today. Ganymede's baby moon furnished it. Cupid, we call it, because it darts through the crammed Jupiter sky, chasing and overtaking the other bodies as though promoting flirtations among them.

Cupid revolves much more rapidly than Ganymede rotates, so that it swings from west to east, like Phobos over Mars. Therefore, in the course of a day, it passes every other moon, and Jupiter, and the sun.

This morning, as orbital matters worked out, it performed single-handedly *five eclipses!* Europa, Io, two outer moons and the sun. Then, for good measure, it transitted as a black disk across Jupiter's face.

But that isn't the amazing part. It happened to eclipse Io just as Io, in turn, was eclipsing the Seventh Moon. Try to imagine us with popping eyes as Io overtook the further moon, crossed in front of it—and then along shot Cupid, eclipsing them both. In other words, *a triple eclipse!*

"Or, to carry the mythological sequence through," Ling said rather poetically, "Cupid chased Io into the arms of Moon Seven, and then, with a sense of decency, hid the union from our eyes!"

But one thing we miss is a solar eclipse with the corona. The fourteen moons eclipse the sun for us with monotonous regularity. But most of them make it a complete blacking out, being much too large. The rest cover only half or less of the sun's disk, being too small. Thus we don't get the blossoming out of the delicate corona.

It is really one chance in a thousand that Earth's Moon is just the right size, and just the right distance away, to cover the sun exactly during solar eclipses on Earth. Jupiter with its fourteen moons misses the mark every time. However, Markers says if we went from moon to moon, eventually we would hit that special configuration.

Impy, our Ganymedian mascot with horns and a monkey's body, did some mutating today, as though to keep us company. His horns sprouted a little into two prongs, making him more comical than ever. And his fur thickened, for no reason except that the mutation-enzyme is constantly working in his system.

It illustrates so clearly—and maddeningly—what is happening to us. For the enzyme is determined to take our soft, hairless bodies and outfit them for the ultra-winter environment. There is only one term to describe us now—shaggy brutes.

We haven't given up hope. Swin-

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erton admits no results, but at least has the enzyme in concentrates. He's not quite sure what to do with it.

ONE-HUNDRED-SEVENTY-FIRST day.

Halloway has helped some to keep our minds off our trouble. He is ready at the drop of a hat to ramble on about the pyramids. His father, on Earth, has pieced out some data of the Martian Era, from the crypt records.

About seventy to eighty thousand years ago, the Martians achieved interplanetary travel. They visited Earth as late as ten thousand years ago. They set up their age-lasting pyramids on Mercury, Venus, Earth and out here, on Callisto if not on Jupiter.

But why? At this point, Halloway always shakes his head, refusing even to reveal his guess.

"It's tied up with the asteroids," he repeats, without elaboration. "Father and I are sure of that. But we won't make any wild speculations till we have proof. Give me one pyramid to examine here, and I'll have the proof. Damn, I wish there was a pyramid right here on Ganymede!"

"Maybe the Martians didn't build any here," Tarnay put in gloomily, "because of the super-evolution menace. Maybe it's in the air we breathe. Maybe we were doomed the moment we set foot here. Maybe—"

"Tarnay!" Captain Atwell said quietly, and Tarnay swallowed and stopped.

We don't blame him for slipping a little, or sounding as though he were going hysterical. We all feel at times as though— No, don't worry, Earth. Our outward bodies may be taking on a wild look, but our minds are the same—we solemnly hope!

Hello, Tycho Space Station, Moon! Markers sends his appreciation for your confirmation of the two new moons of Jupiter he discovered. Evidently your visual conditions are excellent, as Palomar on Earth has not yet located them.

The time mounts up.

Impy did more than amuse us today. He startled us. Or at least Swinerton. Swinerton stared at him curiously this morning, then asked if we noticed something. We shook our heads.

"Impy's the same as yesterday," Von Zell said.

"That's it!" Swinerton yelled, as best he could with thick, flabby lips. "He's stopped mutating. The prong-buds that started two days ago have stopped growing. What stopped the process? It may be our answer!"

We all babbled out at once. Karsen broke into our confusion. Impy had seemed more attached to her than any of us, and spent most of his time around her.

"I remember going in the laboratory yesterday for my salt-shaker," she said. "Von Zell borrowed it, I suppose as sodium chloride for his solutions. Impy followed me. I forgot about him till I was back in the kitchen. When I called sharply, he came scampering out. And he was nibbling, or licking his lips, over something. He must have tried one of the reagents!"

"Which reagent?" Swinerton demanded. "I didn't think any Earth reagent would help. But Impy's case gives a clue that one will. Which reagent?"

KARSEN shook her head, not having seen Impy till he came out. Excitedly, Swinerton led the way to the bunkroom, made over into a "laboratory". Working in desperate haste, he, Von Zell and Parletti soon had chemicals scattered all over.

"Impy sampled one of those," Swinerton half moaned. "But we don't know which one!"

One of them is our antidote. But which one, of the hundreds? Our chemical equipment, in the improved and larger ship of this expedition, is quite sizable. How could we find out?

Simple, it may seem, merely to try each reagent with the enzyme concentrate, till one reacts. But each test takes twelve hours for dead-certain results. Time is our enemy now. Swinerton and his helpers are experimenting with a dozen batches

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at a time. We hope they will strike the right one before—well, before it's too late.

You see, their fingers are stiff, clumsy. They drop test-tubes as often as not. Our margin of time is probably a week. After that, with hands like useless stumps, we'll be helpless.

I'm tapping at these keys with my thumbs. The other fingers are half-paralyzed. By the inexorable laws of evolution, compressed into hours instead of ages, we are becoming creatures of the wild.

Ironic, isn't it, that our salvation is right before our hands—if they would remain hands.

One-hundred-seventy-third day.

To quiet our nerves, Captain Atwell had us play phonograph records of Earth music yesterday. They sounded wonderful. Karsen looked like she was going to break down. But after a glance at the rest of us, she stiffened.

Maybe Atwell was testing us. Anyway he said,

"Chins up! We'll get out of this scrape, as we got out of tight corners on Mars, Venus and Mercury. And remember—we're going to bring back the 'Secret of the Pyramids'!"

That thought still had the power to snap us out of it. Smiling, Karsen baked a coffee-cake, and while eating it we didn't once ask Swinerton how things were going. We joked and laughed and sang.

Tarnay had an idea. "Ladies and gentlemen!" he piped, jumping up. "Behold, the Wild Man from Borneo! Only a dime, ten cents."

Outside, Jupiter shone like a great, unwinking eye, watching these little beings from another world who had dared invade the realm he ruled.

Still no results today.

But Swinerton says we are winning the race with time. Half the reagents have been tried. In three days, the other half will be finished.

That's a cheering note, but the suspense is telling on us. However, we still had spirit enough to lay bets as to which reagent it will be. We made a pool, dividing the remaining chemicals into ten groups, each getting a designated portion. Who will the winner be? The prize will be the privilege of first announcing to Earth the "Secret of the Pyramids", when that is solved. No small honor!

CHAPTER VIII

Marooned on Ganymede

ONE - HUNDRED - SEVENTY - FIFTH day.

Swinerton, Parletti and Von Zell are narrowing down the reagents rapidly. Ironically, it seems it will be among the last tests. Tarnay says if it is the *very* last, he will never again look the law of averages in the face.

Impy has definitely stopped mutating. His prong-buds dropped off today, and he is back where he was when we found him. Whatever that reagent is, it certainly knocked the mutation-enzyme flat on its back.

Halloway, already planning ahead, is trying to talk Captain Atwell into being allowed to take the lifeboat to Callisto.

"Give me one day at that pyramid on Callisto," Halloway declares, "and I'll give you the answer to the Martian mystery!"

How proud we'll be when that day comes. A search that began on Mars, and extended to Venus and Mercury, will be answered at Jupiter.

Time moves inexorably ahead.

Search is narrowed down to ten reagents today. They've been added to the enzyme-culture. We'll know which is our salvation tomorrow.

Impy got into more mischief today. Much like an Earth monkey, he gets his hands into everything. He found Markers' pipe smoldering, puffed on it, then spilled the burning embers in a clothes closet, where he had hidden. We smelled smoke, and luckily put the flames out before they had done much damage.

"That's all right, Impy," Tarnay said, finding one of his shirts ruined. "You gave us the clue to the reagent. You've done more good than harm."

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We were all in the same forgiving mood, laughing over the matter. Tomorrow our misery will be over—or as soon after as the antidote takes the poison of the enzyme out of our blood.

My reports are shorter now, as I'm having great difficulty working these keys.

One-hundred-seventy-seventh day.

Bad news, Earth! Two items of bad news, in fact.

First, Impy indulged in a more serious prank this morning. He crawled among the apparatus in the control room and somehow short-circuited the electrical system. Tarnay says he must have thrown several switches in rapid succession.

We heard the hissing of heated wires, followed by a series of explosions. Impy came scampering out in fright, huddling behind Karsen's legs. We rushed in, to find the control room filled with smoke and ozone.

Tarnay quickly ripped the main power-cable loose, to prevent more short circuits. After the air cleared, he unbolted the panels and looked behind at the wiring system. It was a fused mass! Worse still, the main bank of batteries had cracked. Their solutions had spilled. The force of the explosion had cracked the floor-plate and allowed these precious lead salts to drain down into the vacuum-space next to the hull.

When told of the damage, Captain Atwell turned and stalked toward Impy.

"No Captain!" Karsen said in pity. "Impy didn't know what he was doing. Anyway, remember he did save us from the enzyme—"

"Did he?" Swinerton had just stepped slowly from the laboratory, followed by Parletti and Von Zell. Their faces were pale and dazed.

"We tried the last reagent," Swinerton croaked on. *"Not one worked!"*

THIS is a terrible blow.

We are utterly bewildered—and hopeless. The reagent, whatever it was, worked on Impy. But it wouldn't work on our human types of blood, evidently.

Our last resort would be to make a run for it—back to Earth. But now we can't. Tarnay says it would take days or weeks to make repairs. And our hands—our huge, swollen hands—.

Impy is dead. Atwell shot him and threw his body out. Not in futile revenge against a dumb beast, he says, but to make sure Impy didn't cause worse trouble.

Worse trouble! Could anything worse take place?

One-hundred-seventy-ninth day.

We're saved! From the mutation-menace, that is.

Yesterday morning, Swinerton came out of his lethargy, eying us one after another, as though we were specimens under his microscope. We thought he had gone mad. More so when he let out a yelp of pure joy.

"You've all been the same for five days!" he told us. "You haven't changed! Your hair hasn't grown, or your nails. Five days ago we stopped mutating!"

We hardly dared believe him. But thinking it over, we knew he was right. None of us could remember our nails or our hair growing at the previous rate.

What was the answer—Divine Providence?

Swinerton had the true answer. "Five days ago we ate the coffee-cake Karsen made. Yeast is used in baking. Yeast is an enzyme too. A good old Earth enzyme that killed the mutation-enzyme in us!"

It was all clear, then. Hanging around the kitchen, Impy had sampled yeast, *before* going in the lab. He was still nibbling on that, rather than a reagent, when he came out at Karsen's call. Karsen had saved us, by sheer accident, in feeding us coffee-cake!

Captain Atwell stuck out his hand.

"Karsen—" he began.

But she turned away with a muffled sob. She had held out for more than a month, bravely, in the face of a horrible fate. Now she broke down. We knew why. She had really liked little Impy.

I have better news today.

First signs of our release from the

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mutation are here. Our nails are crumbling at the ends. Swinerton says we'll be normal in a week. Just to make sure, he is feeding us all the yeast that is left in the larder.

But now the other problem faces us.

Tarnay says the repair job doesn't worry him. It's the metals that are lost. A good many pounds of copper wire were fused in the short circuit. The battery-bank lost two hundred pounds of lead solution. We haven't sufficient replacements for those two metals. The ship is made mainly of steel and aluminun.

And Parletti reminded us that Ganymede has no heavy metal deposits—no lead or copper! Where will we get them?

Halloway suggested going to Callisto in the lifeboat, to locate metal ores. Captain Atwell is thinking it over. There is a pyramid on Callisto, too. We still hope to solve that mystery.

Tarnay needs my radio batteries now, for welding work. Will resume when conditions warrant, which may not be for weeks or months.

CHAPTER IX

Search for Ore

GREETINGS, Earth!

Jupiter Expedition Number One reporting, after three months, via etherline radio. Gillway coding. Two hundred seventieth day since leaving Earth.

We have been on Ganymede six months today—the prearranged deadline for our departure. It is imperative that we leave soon, or even food rationing won't save us.

Jupiter is swinging out in its orbit, toward aphelion. Because of its gigantic orbit, its distance from the sun varies as much as forty-two million miles. If we miss this chance to head back for Earth—now swinging around the sun toward us—we'll have added an eventual 200 million miles to our trip including Earth's orbit. Which means two added months of travel in space. Our reserves of food wouldn't last two extra months.

This expedition to Jupiter had to be planned more carefully than any other. Because of the extra fuel needed for the long space journey, food supplies were crowded down. We left Earth at one-quarter year past opposition, so that Earth would sooner make its swing around the sun and come back on Jupiter's side. The whole time-scale was calculated at twelve Earth months—six in space, six at Jupiter.

Now our six months here are completed—yet we can't return. Our engine is useless.

I reported three months ago that a serious accident had occurred. The Ganymedian monkey, Impy, had short-circuited the electrical system. I don't have to tell you how complicated and vital the spark system of a rocket engine is. Forty-five spark plugs to fire each tube, and there are seventy-two tubes. An intricate network of wires serves that purpose. Most were fused. Worse yet, the feeding batteries had been cracked, draining their fluids away. Lead plates had crumbled and dribbled out with the flow.

A nasty repair job. But not just a repair job. Metals had been irretrievably lost. Copper wires had fused, and lead solution had leaked into the vacuum-space between the hulls, where we could not scrape it up without taking the ship apart, beam by beam.

In terms of metal, we had lost fifty pounds of copper, and two hundred pounds of lead.

About ourselves—briefly, we are all well, physically. Ling came down with severe bronchitis, being the least adapted, by race, to an arctic climate. But Parletti doctored him back to health. Our morale—well, we've taken the engine trouble in our stride. But what hurts us is not solving the "Secret of the Pyramids."

We have hopes of fixing our engine soon. But Captain Atwell says, adamantly, that we will then have to leave immediately. No chance to scout

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around here for any pyramids.

Tarnay, chief engineer, gave his report after a thorough examination of the damage. He had enough bus-bar replacements for half the wiring job, but needed 25 pounds of copper—or a substitute.

PARLETTI furnished the substitute. He had discovered a large deposit of beryllium ore within thirty miles of camp. Rich ore, luckily. Tarnay and Ling devised an electrolytic bath, hooking up my radio batteries. The beryllium was deposited as powder. This was melted, by an improvised electric arc, and the metal was drawn into wire. So that problem was solved, as beryllium is a good conductor of electricity, comparable to copper and silver.

Simple to tell of it. But it took six weeks of labor, planning, and sleepless nights of thinking.

Thus the electrical system of wiring was restored. The battery problem was not so simple. Ganymede, as Parletti reported from the first, has no heavy-metal deposits. Where would we get our lead?

Captain Atwell broke out the lifeboat for the emergency, for the first time. He and Parletti scouted all the way around this wintry little world, stopping here and there for tests of underlying ores. Parletti's reports were always the same—lots of magnesium, beryllium, calcium, aluminum. Traces only of lead, zinc, silver, gold, mercury. The elements drop sharply, after iron, in point of plenitude.

"Well," shrugged Captain Atwell, "we can't get lead on Ganymede. That's that. But we can go to Callisto, or Io or Europa for it. Thank God for the lifeboat!"

Hold on a minute.

Attention, Tycho Observatory and all Earth telescopes! Markers has just spotted a new comet that has swung around Jupiter and is heading for the sun. Watch for it five degrees south of Jupiter, in the constellation Taurus. This is one of the fifty or more short-period comets that use the sun and Jupiter as the foci of their elliptical orbits.

Two-hundred-seventy-second day.

The lifeboat went on its short jaunt to Callisto, the next nearest moon outward from Jupiter. Only 503,000 miles. It came back a week later. Atwell and Parletti dejectedly reported no heavy metals. Callisto, like Ganymede, was all light elements.

"Well, there are still Io, Europa and then the other ten moons," Atwell said, brightening. "We'll try them all."

Parletti shook his head. He spoke reluctantly, knowing he was dampening our spirits still more.

"Afraid it's no use, Captain. It's likely that in the whole Jovian system, heavy metals are rare. The average density of Jupiter and his satellites is only one and one-third that of *water*. This means the bulk of their material is of the light elements. Maybe their cores are dense, but buried under miles and miles of the light matter.

"This agrees with orthodox theory. When a passing star caused the sun to erupt molten balls, the lighter ones were thrown farthest. That is, the lighter ones in point of density, not total weight. Gravitational forces work by rules of mass per unit. These low-density balls became the planets Jupiter, Saturn, Uranus, Neptune and Pluto. The denser balls did not fly so far. They cooled to Mercury, Venus, Earth and Mars."

YOU can guess what happened. Atwell tried an expedition to Io and Europa. Again no heavy metals were found. Parletti was right.

From then on, we knew our situation was really grave. In the whole Jovian system—one huge planet and fourteen moons—there was seemingly no deposit of lead ore!

Incidentally, Halloway begged to be allowed on the trip to Callisto, where a photograph had shown a pyramid. If nothing else, we would at least solve the Martian mystery. Halloway examined the Callistan pyramid eagerly—only to find it useless for his quest. It had no inscriptions. The apex wasn't even completed.

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"The Martians built it nearly to completion, then abandoned it for some reason," he muttered. "Of all the rotten luck!"

He wheedled his way along to Io and Europa, but in all their flights over those two satellites, looking for lead ore, not a pyramid was sighted.

Fate has been doubly unkind to us, we feel. It has been an obsession with us all, not only Halloway, to solve the pyramid's secret. We would almost gladly accept death here, if only before the final moment we could radio to Earth a thrilling announcement:

"Attention, Earth! The pyramids were built by the ancient Martians in order to—"

A month ago the lifeboat expeditions crushed our last hope of finding lead ore. After that, for a time, we lived, ate and slept mechanically, cursing the gods of this cruel universe.

I see, in telling these woes, that I've forgotten to mention the blight of super-evolution which has now disappeared. The yeast worked perfectly, destroying the mutation-enzyme in our bloodstreams. Fire fighting fire, for yeast is an enzyme.

Swinerton explained it as follows. Yeast is a strictly Earth enzyme. The mutation-enzyme is strictly Ganymedian. The two are as incompatible as white corpuscles in the bloodstream, and germs. The yeast acted like white corpuscles, devouring the mutation-enzyme.

The return to normal was startlingly rapid. Our long, coarse hair fell out in bunches. Toenails crumbled and dropped off. Fingers regained their flexibility. Downy fur on our bodies shed swiftly. Thickened lips shrank. From shaggy half-brutes in appearance, we became ordinary human beings. All in one short week.

Karsen dared to look in her hand-mirror one day. She shrieked in joy, wept suddenly, then dried her eyes and cooked a meal. We men didn't burst with joy, or cry, but we felt that way. Karsen once again took out her miniature camera and snapped us, going about our daily tasks. The nightmare was over at last.

At least, *that* nightmare. We've been saved from turning into Ganymedian life-forms. What is to save us from becoming Ganymedian death-forms? We don't know yet.

You'll be interested in my latest report.

Markers has interpreted some of the photographs taken of Jupiter, weeks before.

With a red-fog filter, he and Parletti had photographed Jupiter's actual surface, through the thick pall of atmosphere. A great "continent" of what seems frozen sludge occupies one-quarter of the globe. This continent is so huge in area that it would take a fast automobile months to cross it. It's about 100,000 miles in its greatest length—four times around Earth!

FURTHER, this "continent" on Jupiter is lapped on all sides by "oceans" of liquid ammonia and methane. The surface temperature is at least two hundred degrees below zero. On the continent are mountains. Judging by their shadows, they must be ninety miles high. A dozen Mount Everests, piled on top one another, would not stand even with this colossal range of peaks.

But most intriguing of all is the Great Red Spot. It's still there, though its color has faded from the crimson it was in the last century, to a pale rose. The Red Spot, Parletti says, is really a vast outpouring of gases from the interior of the mighty planet. The fumes come up through a pit that is ten thousand miles wide. Thus the whole Earth could be dropped into this hole without touching the sides.

Parletti hazards wildly that the pit drops right down to the center of Jupiter for forty-three thousand miles. If so, Earth, Venus, Mercury and Mars could be stuffed into it and fail to fill it. The red gas that billowed and fumed out last century became a permanent bubble thirty thousand miles long by seven thousand wide, far larger than all of Earth's land area. The red gas is no longer

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bubbling out, due to some enigmatic geological reasons.

At any rate, we're witnesses at first hand of a world built on a giant scale. It awes us, makes us feel small, when even our world could drop down one of Jupiter's pores and not be noticed. If all Earth fell into the vast seas of liquid gases, the splash would barely send a rill up on the shores of that stupendous continent.

As for Jupiter's gravitational force, Markers says the fourteenth moon (which he discovered) is twenty-nine million miles out. Thus Jupiter holds sway in space further than the conjunction distance between Earth and Venus. Therefore, if Jupiter were in Earth's orbit, Venus would become its moon!

CHAPTER X

Jupiter's Super-gravity

TWO-hundred-seventy-fourth day. I mentioned that now, as of the present time, we have hopes of getting lead ore. Here's why. Parletti electrified us a week ago. Captain Atwell had just called us together for a conference.

"Men, this is a crisis. Our food reserves are low. The lifeboat will hold all of us, but will take six months to reach Earth, with its small engine. Our food wouldn't last six months. Not for ten of us. And we can't use Ganymedian food."

We shuddered at the thought of eating that food, impregnated with the strange super-evolution enzyme, and once more mutating. To arrive on Earth, perhaps, as horrible monstrosities.

"Three of us can reach Earth, in the lifeboat, on our restricted food rations. Seven of us would be left behind. Which three shall it be?"

Three to live! Seven to die!

Karsen was chosen first, naturally, being a woman. Captain Atwell, though he stormed and raved, was forced to accept himself as second choice. Halloway was third, being the youngest man. None of us wanted Karsen to arrive on Earth with a broken heart, anyway.

"Go back without the 'Secret of the Pyramids'?" Halloway tried to remonstrate. "Not me! I tell you I won't."

We knew that behind the excuse he meant simply that he thought others of us more worthy of life.

But the choice remained at those three. Well, Earth, we knew what we meant to each other at that moment, as we fell to silence, the three looking at the seven in heart-sick farewell. Of the seven of us, three had been to Mars, Venus and Mercury: Parletti, Markers and myself. Strange to think of laying our bones, at last, on Ganymede.

Jupiter shone outside our window, mockingly. Parletti had been staring at Jupiter fixedly, all through the proceedings.

"Wait," he said suddenly. "Maybe there's lead ore on Jupiter itself!"

"Are you mad?" Atwell snapped.

Parletti dashed away and returned with the photoprints taken of Jupiter's surface.

"Look! This giant hole from which came the Great Red Spot—trillions of tons of heavy gases. The hole probably drops to the center of Jupiter. It's like an active crater. Craters give out gases—and also molten matter from below. This molten matter should be of heavy metals, from Jupiter's core!"

Stunned silence. Atwell's face lighted for a moment, then fell.

"Are you mad?" he said again. "Jupiter's surface gravity is two-point-six that of Earth. The lifeboat would drop like a stone. And what man, or men, could last an hour if he weighed nearly five hundred pounds? It's impossible!"

Our shoulders sagged again, after that brief ray of hope.

"It's impossible," Captain Atwell repeated. "But—we'll try it!"

SO, in the past week, we've been preparing for that last desperate gamble. After hours of figuring, Tarnay nodded.

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"Might work. I can rev up the lifeboat's motor twice normal. That'll be close to the danger point of explosion, but it will give the crew of three a chance to land safely. A chance I can't guarantee!"

"Which will it be, men?" Atwell began. "Three returning to Earth without question, or a chance to save us all?"

I think Karsen was ready to scratch his eyes out, if he had said another word.

Halloway asked, "Which three men will make the flight to Jupiter, Captain?"

Parletti was first choice, naturally, being key man in any search for ore. Swinerton and again Halloway were the other two, being the youngest and strongest. They would need to be strong and young for an experience no man had ever tried before—challenging two-and-a-half times normal Earth gravity.

All is ready for the start tomorrow morning.

Tarnay just finished stepping up the lifeboat's engine to twice-normal rocket blasting. Three space-suits were broken out of stock, and carefully tested for inflation. Three compressed oxygen tanks are strapped to the backs. A reserve of six more are packed in the lifeboat, along with two weeks' supply of food and water.

It is doubtful they can stay more than one week in that frightful gravity. In fact, we don't know if they can last a day!

But Swinerton is confident that the human organism is tougher under trial than generally known. To toughen themselves up, the three men have been running around the camp daily, for the past week. It's no joke, in this thin air, where you pant if you just walk.

Yesterday they ran for eight hours straight, coming in so weary that they could barely stagger to their bunks and drop into instant sleep. But upon awakening, twelve hours later, they felt fit as a fiddle, physically tuned up, and ready for the worst.

God knows what that worst will be.

Thanks for the special musical program dedicated to us, Earth, of last night. Picked it up clear as a bell, even across 400 million miles of space. We especially liked that new hit you say is sweeping Earth—"The Pyramid Blues." That's what we've had for six months, since circumstances have prevented us tracking down the "Secret of the Pyramids."

Two-hundred-seventy-sixth day.

They've gone!

The lifeboat took off smoothly from camp and darted into the sky. It was limned as a black speck against the shining bulk of Jupiter for a moment, rockets flaring, before it vanished into smallness. They left ten hours ago. They should make the 664,000 miles in about that time. No radio report from them yet.

STAND by! Report coming in . . . Recontacting. Parletti just reported. I'll give his words verbatim.

"Hello, Ganymede! We're ten thousand miles above Jupiter, preparing to land. I didn't report before, so as to save battery current. We'll need it for the rocket system. Just want to say it's a glorious sight—Jupiter spreading in all directions, glowing in vivid colors. We're slowed to a standstill, with the first wisps of its atmosphere around us.

"We're reconnoitering the atmosphere bands. From this close vantage, they all seem to be stormy, so we'll drop right down into the Red Belt near the equator. And nearest our destination.

"Well, here we go. It's like holding your breath and diving into unknown waters. Signing off. Will resume when we land."

That was all. *When* we land, Parletti staunchly said. We know as well as he that there is an implied *if*.

Well, Earth, our hopes have gone with those three men.

They're fighting their way down through Jupiter's stormy atmosphere. Fighting a gravity that swings fourteen moons around it like pebbles. Fighting a gravity that has yanked fifty wandering bodies into a closed orbit, and made them comets. Fight-

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ing a gravity that grips a satellite larger than Mercury. Fighting a gravity that disturbs the orbits of the asteroids, though they are further from Jupiter than Earth is from the sun.

Stand by. I will notify you the moment we hear from them again.

Sorry, no good news. No report yet from the lifeboat expedition. Not a word from them since yesterday—eighteen hours. Needless to say, we're worried.

Markers has kept busy at his telescope, refusing to bite his nails. The rest of us wish we could achieve that calm. Markers has spotted another new comet. Seven degrees east of Jupiter, I think he said. It isn't important.

Will resume later.

CHAPTER XI

Challenge of Jupiter

TWO-HUNDRED-SEVENTY-EIGHTH day.

No word yet, Earth. We've about given up hope. The lifeboat was yanked down by crushing gravity, bobbed like a cork in Jupiter's storms, and smashed up somewhere in a nameless graveyard. That must be what happened.

Captain Atwell hasn't given up hope. This morning he forced us, almost at the point of a gun, to play cards. Yelled at us to stop whining like children, and get our minds off the matter. For a while we caught his spirit and played poker. As stakes, we divided up the moons, two for each.

One hand was interesting. Ling and Von Zell cleaned out the rest of us in short order. Then Von Zell, catching a full house, bet four moons. Ling raised it one. Von Zell bet his remaining four. Ling called, with two. When Von Zell remonstrated, Ling smiled and said,

"But I'm betting Callisto. Callisto is worth two other moons, eh?"

Von Zell agreed and Ling took the whole pot with his four jacks.

Betting moons may sound a little mad, or ridiculous. But it is a grand feeling to be out here, and know no other men have ever been here. We sometimes felt as though we actually *owned* the moons, by right of discovery.

The game over, we lapsed instantly into our moodiness. Even Captain Atwell now has a bleak look in his eyes. He has the courage of a lion. It's terrible to see hope fading out of his fierce eyes.

How can there be hope? The three men have been gone thirty-six hours. They lie on Jupiter somewhere, crushed, broken—

Stand by! Signal coming in!

Resuming.

They landed safely, Earth! All the stars be praised! Here's Parletti's report.

"Hello, Ganymede! Safe landing, except for a jolt that threw the radio out of commission. It took us eighteen hours to descend. Halloway, at the controls, let her drop for a while. It scared us the way our drop ran up to a thousand miles an hour, just from gravity-pull. Halloway started the underjets and after that we kept them going steadily.

"It was a fight all the way down. At five thousand miles, surrounded by Jupiter's atmosphere, we were blind. Swinerton read off the height dial at five-minute intervals. At three thousand miles Halloway had to gun the engine way up, to keep from going into a drop and spin.

"The last few hours were pretty bad. At a thousand miles, the storms hit us. I don't know whether you'd call it the stratosphere or what, but the thick gases began whistling by. Then they began roaring. And finally they began blowing us back and forth in vicious gusts.

"Well, we were pretty well bruised up. Halloway's seat strap gave way, and it took Swinerton and me an hour to lash him back in. Halloway had one hand on the controls all the time, the other hanging on the seat-rail for dear life. Good thing Halloway is strong as an ox."

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It makes me jealous just to recount such adventure! Gillway speaking, Earth. Continuing with Parletti's report.

"When we got below a hundred miles, the real fight began. We were wrenched and buffeted and battered till we thought every rivet had been ripped loose. At fifty miles, Swinerton yelled that we were dropping like a stone. Halloway revved the engine for all it was worth. We could feel Jupiter's true gravity tugging at us now.

"The lifeboat slowed down, but at ten miles we were still sinking fast. At five miles, Halloway screeched that he had the underjets going full blast. Swinerton yelled that we were still dropping at a hundred miles an hour. A landing at that speed would crush us like an eggshell.

"We thought we were lost. Halloway saved us. Gave her the gun from the rear rockets! As he figured, the thick atmosphere acted as enough of a resistant medium to turn the nose up. Fine, except that the swoop tied our stomachs in knots. Swinerton and I went out like lights. Halloway held onto his senses, God knows how, and brought the ship down-to the surface, still on even keel and racing forward like an express train.

"How to land? Halloway had to figure it all out himself. Barely able to see the ground, through the murky air, he spotted a small lake of liquid gases. Landed her on that, sending up spray for a hundred feet. The sudden cooling on our hull worked through the cabin, and Swinerton and I came to just in time to feel the ship coast to a stop, and then rock gently in the waves of liquid ammonia and methane.

"Gently, did I say? It was about as gentle as a fifty-foot giant rocking a cradle. We were literally slapped from side to side, as the rollers of the Jupiter lake rumbled along under the impetus of raging wind and supergravity.

"But we were saved, and thankful to the bottom of our souls. Halloway eased us toward shore on low rocket blasts, and we beached on what is probably frozen sulphur dioxide. Then we just slumped in our seats, dozing and recuperating from the last eighteen hours. Eventually we crawled around for food, and I set about fixing up the radio. Several wires had ripped loose.

"Well, here we are. We haven't gone outside yet, but it's grand to know we're the first men ever to land on Jupiter's surface. We doubt even the ancient Martians tried it, since this gravity is *six* times what they were born to on Mars!

"Mentally we're glad of the achievement. But not physically. Each of us feels like he is carrying a mountain on his back. We weigh about five hundred pounds apiece. Our muscles are aching, with that load. We're going to rest by lying flat on the floor, for the next twelve hours, and then plan our next move.

"Signing off till then."

Gillway again, on Ganymede.

That was the message that drove us wild with joy. We're still cheering, with the suspense of the last thirty-six hours over. But we're sobering down now. That was only the landing. Now the men have to search for lead ore. How long will that take? And how long can they stand that bone-crushing gravity?

We are permitting ourselves hope. But, to be candid, the odds are still against us.

Will resume tomorrow, when Parletti's next report comes in.

From here on, will be sending daily messages, keeping you up to date. Saving power is not important now.

TWO - HUNDRED - SEVENTY - NINTH day.

Parletti's report came in an hour ago. I will give only his reports from now on. Events at camp, here on Ganymede, are at a standstill. We are just marking time till our men on Jupiter accomplish their mission, if they do.

Calling Ganymede (Parletti signaled). We woke up this morning feeling as though we had slept under a pile of rocks. The gravity, frankly, is horrible. Even arising from the

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floor was an effort. We had to turn on our stomachs, slowly push ourselves to hands and knees, and stagger erect while holding on to the wall hand-rails. Then we stood there swaying, while our leg muscles gradually took up the burden of our five hundred pounds of weight.

We felt a little better after eating, and drinking water. Our first job was to figure out where we were. Swinerton climbed to the conning tower and took a look around. He couldn't see very far in the thick, cloudy mist.

It is distinctly a reddish mist, as of course this is the Great Red Spot area. It is never still. It whips back and forth tempestuously, often shaking the ship. Our gauge showed that the atmospheric pressure was ninety pounds to the square inch. We suspect the vapors are very nearly fluid, from pressure alone, down here at the surface.

The lighting is very peculiar down here. Above are six thousand miles of heavy vapor, including krypton, methane, ammonia, bromine hydride, heavy hydrogen, and polymerized nitrogen. If there's oxygen, it can only be in some combined form, as nitrous oxide.

Sunlight barely worms through this gas-porridge, as a ghastly pale glow. None of the moons can be seen through the pall. We feel as though we're at the bottom of a gaseous ocean, in a submarine.

Swinerton suddenly yelped.

"Life!" he gasped. "There's life down here!"

Halloway and I saw it ourselves a moment later, as it flapped past our window. A small winged creature with a hawk's beak that circled the lifeboat as though in curiosity, then lazily soared away. It seemed almost to float in the dense medium, more like a fish swimming than a bird flying. But just imagine any creature living in this hell-brew air! Swinerton says its metabolism must be utterly alien to anything we can conceive.

"Never mind that," I said when the surprise was over. "What we want is lead ore. Our best chance of finding it is at the rim of that giant hole. Can you see it?"

Swinerton couldn't, though Jupiter's curvature is so slight that hundreds of miles of land must lie within straight-line vision, beyond the mist-curtains. We had to guess where we were. We knew we were east of the great pit, for we had sighted it coming down. But how far? There was only one way to find out.

Halloway, at the controls, eased the ship into the lake again, and we took off. Our hearts stopped, when it seemed we couldn't get up at all. Marooned on Jupiter, we thought, held fast by its gravity like flies on flypaper!

IT took all the power of the rockets to lift us, inch by inch, even after an accelerated run of ten miles! This gravity is simply stupendous. Only the dense air, acting as a lifting medium because of our great speed, raised us at all. After that, with minimum velocity at one thousand miles per hour, the ship continued rising.

We rose a few miles then and flew west. From this high viewpoint, we saw our lake stretching off into the cloaked distance.

"Quite a sizable lake," Swinerton commented.

"Lake?" I returned, and I had to laugh. "Judging by the slow curve of the shore, this 'lake' is probably four or five thousand miles in diameter. It's the size of the Pacific Ocean. And yet, set in the center of a giant continent one hundred thousand miles long, it's no more than Lake Superior in North America."

Hours later a mountain range loomed before us. In the poor visibility, we were surprised.

"Up, Halloway," I shouted quickly, remembering the photographs we had taken from Ganymede. "Up! Those peaks are eighty or ninety miles high!"

Well, we barely made it. The ship zoomed up so sluggishly against the pull of gravity that we reached the range while still climbing. Halloway had to turn parallel with them, climb

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some more, and then hurdle over. It was like a jumper taking a run to get over the bar.

Going over, we looked down on a sight that no other planet affords. Mountain peaks reared almost a hundred miles over the general level. Their broad shadows extended over areas greater than all Europe. Some of their cliff faces dropped sheerly for fifty miles. If laid flat, they would easily hold Earth's largest city. Everything is on a colossal scale here. We feel like little microbes crawling around and getting no place.

The murky sky began to darken suddenly. The short ten-hour day was coming to an end already.

"We've got to land before it's dark," I admonished. "Or we won't be able to see a thing. We have about an hour left."

It was only a half hour later that we found the pit. First we thought another mountain range was ahead. Then we saw that the serrated outline was almost smooth. It was the upflung rim of that great crater, no less than seventy-five miles high.

We spotted a lake to land on, before the rim. Really a lake this time—no more than a few hundred miles wide. We landed roughly, but had some experience this time to go by. We were just in time.

Daylight suddenly blinked out, as Jupiter's whirling rim completely cut off the sun.

One minute we could see. The next moment pitch darkness closed down. Not a star or moon has strength enough to shine through the gas-curtains overhead. We had experienced this Stygian night before, of course. But we still didn't like it. It was too much like being totally blind—or buried.

We arrived an hour ago, ate, and now we're ready to sleep through the five-hour night, and also the next ten-hour day till the following dawn. Swinerton and Halloway are already stretched on the triple-mattress on the floor.

I'm barely able to sit here at the radio.

Signing off.

CHAPTER XII

Mutiny on Jupiter

TWO-HUNDRED-EIGHTIETH day.

(Parletti's report, as follows—Gillway.)

I was too tired to tell of the view of the crater we had, before landing. We had an oblique glance over the rampart, into the pit. Our vision went down—down—down. It was heart-stopping. There seemed no end, as though it dropped right to the floor of the universe.

Since we couldn't see the other rim, it seemed like the edge of the world, dropping sheerly off into nothingness. As I mentioned to Gillway, our measurements on the photos show the crater mouth to be ten thousand miles in diameter. Picture the Earth dropping down into it, without scraping the sides!

I'm a geologist, and I've seen some of the wonders of Mars, Venus and Mercury, not to mention Earth. But nothing compares to this. The ancient canals of Mars. The planet-wide ocean of Venus. The molten-metal seas of Mercury. The Grand Canyon of Earth. They are all little scratches or puddles beside this stupendous cavern of mighty Jupiter.

In fact, you could stuff into it the four inner planets, their moons, all the comets, asteroids and other satellites, and still have room enough for Pluto to fall a few hundred miles!

And my theory is that this pit opens right into the core of Jupiter, for forty thousand miles or so! I hope I'm right, for then it means that heavy-metal ores were spewed out at one time or another. Somewhere on those ramparts may be deposits of the lead we need.

Today we essayed to venture outside for the first time. We groaned at the added burden of the seal-suits. But they are necessary. One lung full of the Jovian air would be our last. Stepping from the air lock, we moved away from the ship. Rather

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stumbled is the word. Each step was a trial. We didn't lift our feet. We dragged them, moving in a sort of hunchbacked shuffle.

"Remember the goose-step of the war days of last century?" Swinerton grinned. "I'd like to see them try it here!"

But we didn't waste time. With my magnifying lens and portable analyzer, I examined likely looking rocks. We were near enough to the rampart to find overflows of the lava. The basic soil underneath was a loam of light elements, as on Ganymede. But these rocks, flung up from Jupiter's denser interior, instantly showed heavy metals. I was right!

"Got it already?" Halloway asked.

"No," I said. "This is mixed ore—iron, copper, zinc, tin, mercury and a dozen others, all jumbled with lead. It would take a complete chemical plant, on Earth, to separate the lead. We have to find high-grade lead deposits."

We sampled all the rocks within a mile of the ship, without success. Then, back in the ship, Halloway coasted us along the lake shore closer to the crater edge. It's night again, now. We'll search tomorrow. The five hours of activity have drained us of our strength. We'll have to sleep fifteen hours again, into the second Jovian day from now.

We saw more bird-fish today. Some in the distance that must have a wing-spread of a hundred feet. Behemoths, in proportion to the world they live in. Swinerton is excited. But naturally, he is not going to waste time on them. Our whole thoughts are centered on finding lead ore.

Signing off. I'm about dead with fatigue.

TWO - HUNDRED - EIGHTY - FIRST day.

No lead ore found yet. Too tired to say any more.

(This was the extent of Parletti's report for this day—Gillway.)

Two-hundred-eighty-second day.

Still no success, Ganymede. Have found much ore, but all with low-lead content.

Two-hundred-eighty-third day.

Gillway speaking, Earth. No report from Parletti for this date at all. We are worried that something has happened.

Two-hundred-eighty-fourth day.

Hello, Ganymede! Sorry didn't report yesterday., Too tired. No results, anyway. None today, either. We toiled part way up the slope of the crater's edge today, hoping for lead ore there. No luck.

The rise was gentle, but it was torture for us. Fighting this gravity is like wading through thick syrup with chains around your ankles. Swinerton collapsed on the way down. Halloway and I dragged him to the ship. Mostly Halloway. That kid has more energy and strength than the legendary Hercules.

Don't lose hope, men. There must be a deposit of lead around here. I found high-grade copper ore today, ironically enough. There must be lead, too. We'll find it.

Two-hundred-eighty-fifth day.

No luck yet. We've been on Jupiter a week today. We've lost twenty pounds of weight each. We think we can stick it out another week. In that time, cross your fingers that we find lead.

Two-hundred-eighty-sixth day.

Great news!

No, we didn't find lead. But we found—a pyramid!

We went in a different direction from the ship today. Suddenly, in the mists ahead, an object took form. Halloway stiffened, and then actually broke into a *run*. He had to stop and slow down to a walk, but reached it before Swinerton and I did. He was already examining the inscriptions around the base.

"They abandoned building the pyramids on Callisto," Halloway said. "And built them here instead—here on Jupiter. What an engineering achievement, in this gravity!"

Achievement is right. This pyramid is simply gigantic. It must be two thousand feet high, a veritable mountain. And they had to lug the great stone blocks up against killing gravity. The cranes and derricks they

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used must have been inconceivably sturdy. And how did the frail Martians themselves stand it, weighing six times normal?

Night came, before we could see much. We stumbled back to the ship, lighting our way with hand-flashes. I'm ready to sink on our mattress. It's a strain even to keep our eyelids open.

TWO - HUNDRED - EIGHTY - SEVENTH day.

Still no lead ore found.

And now, Captain Atwell, a decision faces us—all of us. After the useless quest for ore again today, Halloway faced us.

"Suppose we don't find lead ore? We can't last here more than a few days. I want to examine that pyramid. I want to solve its secret. It's the chance I've been waiting for, during all this expedition. You can go out looking for lead, Parletti and Swinerton. I'm going to spend my time at the pyramid!"

Swinerton and I remonstrated, then agreed to leave it up to you. Give us your decision, Captain Atwell, when we wake up, fifteen hours from now. Please bear these points in mind.

Your decision is whether Halloway is to help us or not. If he doesn't, it will slow down our search. We've been forced, with our strength ebbing, to work in shifts. Branching out from a central point, each man in turn scouts for ore, while the other two rest. If Swinerton and I go it alone, we'll weaken faster and not cover as much territory.

We are not bitter against Halloway for his stubbornness. We know what the pyramid means to him. In fact, to all of us.

What is your decision, Captain Atwell?

(Parletti signs off.—Gillway.)

Gillway speaking.

And so, Earth, we must again make a critical choice. Either lessen our chances of procuring lead ore, or let the "Secret of the Pyramids" slide, now that it is within our grasp. A strange, baffling choice.

Captain Atwell is pacing the floor. His face is set as he wrestles with the problem. Risk our lives further, or pass by the chance to solve the Martian mystery—and startle Earth? Always before, on other expeditions, Atwell placed our lives first without question. The fact that he hesitates shows how that one thing—the pyramid secret—has captured our thoughts.

Stand by—

Atwell has just decided. "I place our lives first," he said. "Halloway is to search for lead."

I don't know, but I think we're all disappointed. I'm going to transmit the decision to Parletti in an hour, when they awake.

(Parletti reports.—Gillway.)

Two-hundred-eighty-eighth day.

Hello, Ganymede! Your decision received, Captain Atwell. But Halloway refused to abide by it. He spent the day at the pyramid!

Before he left, I told him it was mutiny. As his immediate superior, I forbade him to go counter to the order. Halloway laughed in my face.

I realized I could do nothing. We had taken no guns along. To tackle Halloway, by physical force, was out of the question. We can barely drag our bodies along, let alone struggle. I was angry but helpless.

"Sorry, Parletti," Halloway said. "I've made up my mind. Chances are you won't find any lead. Jupiter Expedition Number One does not return to Earth. But Jupiter Expedition Number One *does* send back the solution to the Martian mystery! You'll thank me for it, later. If this is the end, at least we'll wind up in a blaze of glory!"

Well, there you have it. I don't know whether to curse young Halloway, or bless him. Signing off, to sleep.

(Parletti's signal goes off the air.—Gillway.)

Gillway speaking.

We don't know ourselves quite how to react, Earth. But Captain Atwell's eyes went icy cold.

"Gillway, transmit this message to Jupiter. Captain Atwell to Halloway. As captain of the Expedition, I de-

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clare your action mutinous. You are subject to imprisonment, upon return to Ganymede and Earth."

Then Atwell's eyes fired a little.

"Good luck, lad!" he finished.

CHAPTER XIII

Secret of the Pyramids

TWO - HUNDRED - EIGHTY-NINTH Day.

Parletti reporting. Lead ore not yet found.

Halloway reports the following. He walked completely around the base of the pyramid, examining its inscriptions. He is excited. He thinks he has the answer, but needs one final proof. This will lie at the top of the pyramid. He is going to climb it tomorrow!

Two-hundred-ninetieth day.

No lead ore.

Halloway went to the pyramid again today, to climb it. He hasn't returned. He told us it would take him two days. He took along extra rations, and an extra oxygen tank. How in the name of the universe he's going to climb two thousand feet, with that frightful load, we don't know. Swinerton and I can barely push ourselves over flat land — and resting every five minutes at that.

I thought I had heard of courage before. This brand that Halloway has is without a name. It just doesn't make sense.

Two-hundred-ninety-first day.

No lead ore. And Halloway has not returned!

He must have failed. His body must lie somewhere on a pyramid ledge, beyond our ability to reach. Perhaps he has been attacked by a monstrous bird-fish. Peace on the boy's soul.

Swinerton and I will continue searching for lead ore, till our strength gives out. Two-three days we give ourselves.

Two-hundred-ninety-second day.

Halloway is back!

He staggered up this morning, more dead than alive. We dragged him into the ship, gave him a shot of adrenalin for his heart. Swinerton and I have been using the stuff for a week. His face was so thin and haggard that I thought he was dying.

But suddenly he bounced up. And his grin—I wish you could see it. All the triumph of the universe in it. We waited breathlessly for him to speak.

"Any lead?" he asked first.

I shook my head. "But damn the lead. Talk, man! Tell us about the pyramid."

He spun it out painfully.

"Well, I climbed it," he said. "Took sixteen hours the first day, twelve the next. Slept and ate in between. Wind nearly blew me off twice. Groped my way in the dark. Fell once. Thought I broke every bone. But only a finger. Got to the top at last."

A jumbled account. Perhaps the true story will never come out of Halloway. I doubt if he wants to remember it. Climbing two thousand feet upward against the gravity of Jupiter is a feat they'll be talking about for a century.

Halloway went on. "Found the apex chamber. Stone door had crumbled, through age. Jupiter's winds and erosion had wiped out all the apparatus. But one clue was left—as an inscription. It was all I needed."

"What was the clue?" Swinerton and I demanded together.

"Remember the 'Marietta Stone' found in the pyramid on Venus? Several lines of Martian letters, with Egyptian translations underneath. With that, my father on Earth managed to translate some of the inscriptions. Very vaguely, however, for the Martian language is totally alien to any on Earth. And ancient Egyptian, in the first place, is guesswork to our best archaeologists.

"But one clue was in each pyramid, on each planet. A set of figures. Mathematics is a universal language. These figures told how much *power* each apex-machine produced."

"Power to do what?" we asked patiently.

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"To move a planet."

"What kind of power is that?" we gasped.

"Gravity-power," Halloway said. "This Jupiter pyramid was rated at three hundred twenty-five units of gravity-power."

"Move a planet?" That suddenly soaked in, to Swinerton and myself. "*What* planet, for God's sake?"

"Asteroidia," Halloway said, as casually as though telling us it was snowing outside. "The planet that once existed between Mars and Jupiter."

WE HAD to pry the rest out of him. We were cruel about it, as poor Halloway was completely spent. He could hardly talk. But he gamely gave us the whole story. His eyes shone dimly, as though he had looked through some window into the hoary past. And we could see his brain was a little giddy, with things that stunned and were almost incredible.

"The Martians achieved civilization and conquered space about seventy-five thousand years ago, in Earth's time-scale. For twenty-five thousand years they colonized, sometimes ruthlessly.

"For instance, they enslaved most of the Venusian race, which was why the modern natives wanted to kill off the first Earth Expedition, thinking them the returning Martian overlords of legend.

"Also, on Earth, they killed off Neanderthal man, for some unknown reason, which neatly solves that anthropological mystery of our past. Father isn't sure, but they may also have warred on Atlantis, later, and may actually have caused that gigantic continent to sink, by super-forces.

"And don't think the Martians didn't have super-forces. For they moved, or tried to move, a planet!

"Fifty thousand years ago, it happened. The fifth planet, Asteroidia, had a very eccentric orbit. In fact, at one point, it met and crossed Mars' orbit. Some of the asteroids today still do that very same thing, and also cross Earth's and Venus' orbits.

"Eventually, through the ages, the two planets were coming closer and closer to meeting at that danger point. Several previous near-skimmings had raised enormous tides in the then-existing Martian oceans, destroying lives and cities. But worse, it was estimated that after several hundred years the two planets would collide head-on. Their orbits would intersect. Mars would be utterly destroyed!

"Scientists put their heads together. They must destroy the fifth planet, or move it. Martians did not want to migrate from their home planet forever. So the scientists devised a daring scheme.

"They built pyramids on Mercury, Venus, Earth, Mars and Jupiter. They were simply foundations to hold their apparatus, and the pyramid-form is the most sturdy of any geometrical shape.

"The machines were—well, gravity concentrators, we might say. It's head and shoulders above anything we know.

"It's gravity control—the one thing, like radioactivity, that Earth science can't seem to do a thing with. I don't want even to guess at it, but somehow these Martian scientists took some of the gravity of a planet, and projected it as a beam, to do with as they wished.

"The machines were needed on the four inner planets, in that they were small bodies with comparatively small gravities. Only one set was needed on the outer planets—on Jupiter, with its tremendous storehouse of gravity. But the idea was to get at Asteroidia from both sides. Perhaps on each planet they built hundreds of pyramids and machines. Those we've found are the few that survived. Most of them crumbled away, in fifty thousand years.

"Anyway, the machines were completed and installed. And then the great tug-of-war began. They were trying to tug the errant fifth planet out of its predestined orbit, into a new one that would no longer endanger Mars."

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Halloway's eyes closed. But with great effort he shook himself awake and continued.

"This is a wild guess, but it probably took two hundred years! For two hundred years the giant gravity-beams dragged at the fifth planet, like the tides drag at Earth. First a drag from Venus, when Asteroidia was ahead in its orbit. Then a drag from Earth, as Earth was in position. Then Mercury and Mars, at the proper moment.

Every time mighty Jupiter was at hand, there was a furious tug from the Jovian machines. Slowly but surely, as the years sped by, the fifth planet was forced out of its age-long orbit.

"But something unexpected happened. Asteroidia finally fell apart under the terrific strain. Or rather, it exploded, becoming the pieces we know today as the Asteroids! And so—"

But at this point, Halloway slumped back, sound asleep. Swinerton and I are joining him. Resume tomorrow.

(Parletti's signal is silent — Gillway.)

Gillway speaking.

Well, Earth, there you have the "Secret of the Pyramids!" A saga of a mighty, dead race that stretches back fifty thousand years, when man was still huddling around fires before caves.

This expedition probably won't return to Earth. But who cares? That's the way we feel right now. We've done our bit in exploring, both in the present and past. We're going out, as Halloway said, in a flash of glory.

Two-hundred-ninety-third day.

(Parletti reporting—Gillway.)

"Great piece of work," I congratulated Halloway, this morning. "The inadvertent explosion of the fifth planet also explains why the Martians vanished so mysteriously. The explosion, not foreseen by them, must have given their planet a big jolt and destroyed them. Undoubtedly a rain of meteors fell on Mars, leveling all.

"In fact, the meteors must have afflicted Earth, too. One piece probably dug out the Mediterranean Basin, in prehistoric times, and caused the Noachian flood."

I had thought that all out, waiting for Halloway to waken, but he shook his head with a dreamy look.

"No, because the records show this was done fifty thousand years ago. And the Martians were on Earth as late as ten thousand years ago. They had traffic with the Egyptians, who deified them as Osiris, one of their principal gods, and copied their pyramids after the Martian style.

"The Martians *did* save their world. They lived in safety for forty thousand years afterward!"

Swinerton and I digested that.

"Then what did blot out this magnificent scientific race that could move and destroy a whole planet?"

Halloway shrugged. Now a new mystery has come up, more puzzling than the pyramids themselves. But Halloway had suspicions. He went on slowly.

"I just wonder what wiped out the Martians. A natural agency or—something else? I'll tell you what I saw, at one side of the pyramid, here on Jupiter. A great heaped pile of metal rust, for acres and acres. The Martians wouldn't just dump metal there. But suppose—just suppose a fleet of ships fought there, and crashed, and rusted?"

"Civil war among the Martians?' Swinerton asked.

"Or the Mercurians challenging their rule?" I put in.

"Maybe," said Halloway. "Although the Martian records show little civil war. As for the Mercurian brain-plants, they gave up their activity long before the Martians even appeared on the scene."

THUS the great and stupendous saga of the solar system has opened a door to even greater mysteries. The pyramids after all were only one phase of it. Who or what had killed off the powerful Martians? There is no answer for the present, Halloway says, till the Martian records are examined more thoroughly.

Signing off now. We've put in a

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hard day's work. Will leave Jupiter after our usual fifteen hours of sleep.

Two-hundred-ninety-fourth day.

Gillway reporting, from Ganymede.

The men are safely back on Ganymede. That is, Swinerton and Parletti. Halloway is still down on Jupiter, with all the remaining oxygen and food. They tried getting away, the three of them. But the ship wouldn't lift. Too much load. Eliminating one man's weight would give them the margin of escape.

Halloway insisted on being that man. Threatened to fight it out, if they argued. Swinerton and Parletti were too weak to resist.

"Quick!" Parletti gasped, as soon as the ship landed at our camp, and he staggered out. "Empty the hold. Then go back—get Halloway! Pyramid is at east crater edge, center of Red Spot. Halloway's there."

Not very specific directions, but Atwell went instantly, with Von Zell. They left an hour ago. Fresh men, and with the hold empty, they should get through okay. We're all praying Halloway is found alive. He's made our expedition a thundering success, adding the pyramid secret as a bright feather in our hats.

Two-hundred-ninety-fifth day.

The lifeboat is back, with Halloway. Thus all three of the *real* Jupiter Expedition Number One are back and alive. Alive, but not so well. In fact, they've all collapsed, with their muscle tissues and internal organs practically pulled out of place after two weeks under the hammer of Jupiter gravity.

We hope they pull through.

Two-hundred-ninety-sixth day.

Halloway woke up today, weak but grinning.

"Captain Atwell," he called. "Thanks!"

"In behalf of the expedition," Atwell returned, "thanks to you. Are you all right, lad?"

"Huh!" Halloway retorted. "Grind me up a pyramid, and I'll show you. I'll eat it, with pepper and salt. I'm hungry!"

We all felt better then. Halloway would recover, and the other two as well.

"Now tell me," Atwell said. "What were you dreaming about, when we found you sitting before the pyramid, staring at it as though you were under a shady tree on Earth, loafing?"

"I was just wondering," Halloway said, "about the Martians. Suppose some invading race *from outer space* killed them off!"

That's all we've been discussing all day. Had some titanic battle occurred there, around a pyramid on Jupiter? Had some Invaders from Beyond met the Martians in this backyard of the solar system, and fought it out? Would there be other battlefields on Saturn, Uranus and beyond?

We don't know, Earth. We only know we've been saved by this event of the past— But I forgot to tell you.

Funny thing, but Parletti compeltely forgot to mention it, while on Jupiter, in the excitement of Halloway's revelation of the pyramid's secret. And it slipped my mind, in turn, since they came back. It seemed so relatively unimportant.

YOU see, back on Jupiter, Halloway dropped another Bombshell, after telling the pyramid story. He mentioned casually that the pile of metal near the pyramid had *lead* in it!

He knew lead rust when he saw it, he maintained. Besides, he had tasted some, and it was sweet, like all lead salts.

The three men went there immediately. Sure enough, certain portions of the huge metal rust pile were almost pure lead, in age-corroded form!

"Probably used fantastic ray-weapons that we don't know about," Halloway had conjectured, in line with his battle theory. "Used the lead for screens or mountings or something else."

At any rate, they coasted the ship up and shoveled in about five hundred pounds of lead rust. Or thirteen hundred pounds, Jupiter-weight; at least half of which should be lead metal. They nearly broke their backs, but sang while doing it. Solving the "Secret of the Pyramids," and finding lead

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at one and the same time was certainly something to sing about.

And Parletti had simply forgot to mention the lead!

It wasn't till he and Swinerton landed, and he gasped for us to get Halloway after unloading the hold, that we knew. For the hold was full of lead cargo. That was why one man had to be left behind, not to mention all empty oxygen tanks, food and water canisters, and half the inner cabin's walls. They had just about stripped the ship down to its bones. The weight of the lead itself was counterbalanced by the amount of rocket fuel previously used up. But they had still been forced to leave Halloway behind, so great was Jupiter's gravitational drag.

And in all that excitement, I forgot to mention the lead to you, Earth! Since then, Tarnay, Ling and Von Zell have been busy long hours, reducing the lead rust to metal by means of charcoal. The rest of us are relining the batteries that will once again bring our engine to life.

One more thing.

Atwell suddenly frowned at Halloway, a while ago. He had forgot something, too.

"You're under arrest, Halloway, for disobeying orders," he said sternly. "You must be punished. When we get back to Earth, they'll throw a parade of honor for us, down Fifth Avenue in New York. And you won't be with us!"

He glowered at poor Halloway.

"No—you'll be out in front!"

Halloway squirmed, and seemed about to have a relapse. I've never known a man yet—not *our* kind of men—who liked to play the hero.

Not that Halloway's instincts aren't human. Far from it. In fact, insofar as he and Lonna Karsen are concerned, well—to make a long story short, the way those two have been looking at each other, I'm sure they're going to have something else besides science to discuss, on the way back.

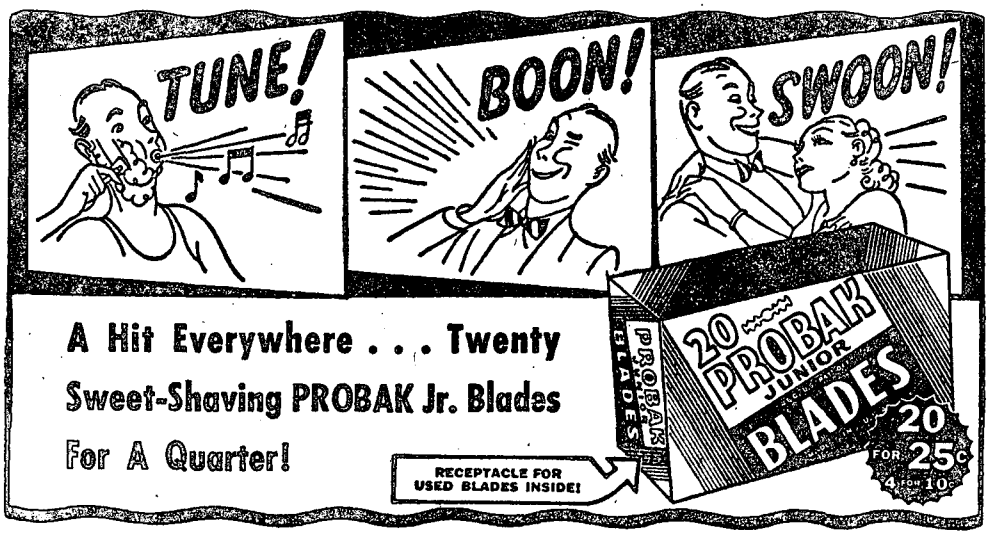
No matter where you find it—it's still love!

That's about all, Earth. Batteries done. We're taking off in an hour. We'll be on Earth in three months and two weeks. The delay in finding lead added those two weeks. But our food, rationed, will last us.

I think we'll be singing "The Pyramid Blues" on the way home—and grinning all the time.

Gillway, radio operator, Jupiter Expedition Number One. Signing off!

Next Issue: SUPER-ATHLETE, a Novelet by DON TRACY



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RENDEZVOUS IN THE VOID

A Prize-Winning Amateur Contest Story

By BROOX SLEDGE

PROFESSOR ARCHIBALD ENGLAND, famous archeologist, was below deck poring over his fifteen-year collection of data concerning the evolution of early man. There were less—and more, laboriously acquired—scraps of evidence pertaining to the teeming life which had flowed over Earth before the appearance of man.

Bill Maddox, scientist and inventor of the *Gull,* a remarkable submarine which they jokingly called the "Depth Hound," was in the conning tower. Younger than England by a number of years, nevertheless, Maddox was a firm friend of the erudite professor. Both of them daring and adventurous, they had combined their educations and accomplishments to make this epic voyage. Thirsting for knowledge of the origin of terrestrial life, they were hot on the trail of ancient man. Then what were they doing thousands of miles out here in the Atlantic Ocean? They were seeking information pertaining to the lost Atlantis.

"I can't be wrong," muttered the professor as he busily calculated with a pencil. "Some definite evidence must be hidden in subterranean caverns beneath those islands. I—"

"Land ahead, Professor," Maddox's voice came through the communication radio-phone. He sounded excited.

Professor England started and then hurried to the control room of the *Gull.* Bill Maddox turned at his entrance and lowered his eyes from the binoculars. His orbs were strained and weakened from the ceaseless vigil he and Professor England had alternated in keeping for the past forty-eight hours.

"Good!" exclaimed the professor, taking the glasses, and sweeping the horizon until he sighted the tiny atoll slightly to the southeast.

"From its looks the island isn't more than several miles wide, not very long. It may be one of the many that are reportedly honeycombed with caverns," explained Maddox.

"It must be!" declared England.

"And you believe that with the *Gull* we can submerge and find entrances to those caverns?" inquired Bill.

"With all my soul I believe just that. You submerge this depth hound deep enough, my boy, and I will find the caverns."

"How soon shall we go under?" Bill wanted to know.

"Right now," answered the professor promptly.

FIVE minutes later the sleek, gleaming cigar-shaped craft began its voyage into the depths, submerging fifty feet and easing forward toward the sloping bulk of the island's under-water foundation.

Forward in the queer observation chamber in the bow, Professor England's eyes were intently watching the crystal-clear observation window

Two Intrepid Scientists of Earth Pursue

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Professor England and Bill Maddox gazed at the strange lettering carved over the great arch.

as a special lighting device illuminated the stygian gloom outside. Slowly the *Gull* nosed around the island, like a huge, inquisitive fish. Professor England strained his eyes trying to aid the light in piercing the darkness as he watched for a break in the ocean floor that might signify an opening of some sort.

"I'm afraid we're not under far enough, Bill. Submerge another fifty feet," he spoke into the radio-phone after the ship had circled the base of the island twice.

Down, down, hovering close to the bottom of the submerged mountain, went the *Gull* as Maddox's hands skillfully manipulated the complicated controls.

"One hundred feet down," finally came Maddox's voice.

"Swing around again," replied the professor. "More slowly this time."

At this depth marine growths almost covered the ocean floor. Small fishes swam languidly before the observation window. The *Gull* slowly circled the island at this new level, but no cavern opening greeted Professor England's eyes.

Far from being discouraged, the professor, never taking his eyes from the window, asked for another descent. Still another fifty feet, with the same result.

"Still deeper, Bill," came his voice.

Only growths and queer fish.

"I'm afraid we can't go any deeper,"

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said Maddox reluctantly when the depth gauge registered 600 feet. "We've gone fifty feet farther now than the ship was built for. But we're not licked by any means, Professor. There are lots of islands in this part of the ocean. Surely below some of them there are openings."

"Hold it, Bill!" The professor jumped up from his seat by the window, put his face close to the window. "There it is! I knew I was right. An opening! An entrance to the caves. I've waited a long time for this, but it was worth it all."

The navigator promptly cut his motors and swung the *Gull* around. By this time the ship was close enough for him to make out the sight that had caused the professor to jump up so excitedly.

Black and forbidding, almost closed by the various growths around it, the cavern entrance slowly began to fill the observation window. Possibly a hundred feet in diameter, the circular opening was large enough to admit the elongated submarine easily.

"Be careful. Go slowly and watch for turns," the professor admonished Maddox as the *Gull* nosed gently into the great opening, brushing aside quantities of marine vines and vegetation. The strong light now seemed dim, able to thrust its rays only fifteen or twenty feet.

"A right turn," called the professor.

Maddox perceiving the crook in the immense cavern at the same time, conned the responsive ship along the tubelike passage. The cave veered downward slightly, then turned sharply upward. Great creatures of the depths went past the window, some slamming into it, others swimming along with the ship, blinded and fascinated by the bright light.

UPWARD now the *Gull* followed the shaft and finally popped to the surface of a subterranean lake. Huge rocky walls that seemed to tower up into infinity frowned blackly down upon the little craft that had thus invaded their age-old sanctuary. A weird, ghostly light danced throughout the mammoth room cleft in the rocks. The waters of the lake were still and placid, seeming to resent the temporary waves the *Gull* had created.

"Look, Professor, openings over there in the walls!" came the excited cry of Bill Maddox as his eyes swept the great subterranean harbor.

"Yes, and that's where I hope to find knowledge that means a great deal to man in his quest for facts concerning early evolution," replied Professor England. "Drive over to that ledge, and we'll go ashore to explore."

A few minutes later the two explorers, armed with powerful flashlights and scientific paraphernalia, stepped from the *Gull* onto the rock foundation of the ledge.

"Those openings have the appearance of being man-made," the professor cried. "They're too evenly spaced and smoothly cut to be other than the work of man!" His voice released some of the pent-up excitement as he sighted an opening larger than the rest. "That archway has an inscription over it! Look, Bill, we've stumbled onto something that may substantiate all the fables of Atlantis."

The two excited men stepped simultaneously to the doorway and gazed at the strange lettering carved over the great arch.

"It's like no language I know," admitted Professor England ruefully, playing his powerful searchlight over the markings. "We'll have to photograph it and take the film back with us for study. Use the infra-red equipment, Bill."

Maddox stepped back, drew the camera out of its case, focused it, and made several exposures of the writing.

"Let's see, now, what is beyond this gateway. We can come back to this later," said Professor England eagerly.

"Wait," said Maddox. "It seems as if I ought to know one of those words —'kitrick.' If I remember right, the old Atlantean tongue had a word for 'atom' that was 'cilrik.' The word could have become changed or twisted somewhat in time. This may be pre-Atlantean."

"That is a definite possibility, Bill,"

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agreed Professor England. "Now, what do you say we explore beyond the door?"

"Lead on, Professor," responded the inventor. "This is your party."

The two men stepped through the opening.

"Prof—" began Maddox, and his voice was cut off as by a closing door.

It was like that, too. Both men were engulfed in a nameless blackness. Consciousness remained with both for just a moment. The blackness seemed to swirl around them, a great light

take a look out there you will see that we are certainly out of the underground chamber."

The professor's eyes swept the surrounding country. It was true! They were in a small room right enough, but they were no longer underground! And the scenery . . . lush vegetation, great dark-green trees thickly entwined with vines and growth of every sort, waist-high grass. To the left out before them the mountain on which they were perched in the small, big-windowed room stretched endlessly

Meet the Author of This Story

Broox Sledge

BORN February 8, 1919, in Memphis, Tennessee, but have spent all but a few months of my life in Mississippi. Was graduated from New Albany (Miss.) high school in 1936. Spent most of my spare time during high school working in the weekly newspaper office there, securing regular work in the office upon graduation.

Moved to Pontotoc, Miss., in 1939, to the newspaper there and to Eupora, present home, in 1940. Operate linotype machine and do general composition for the newspaper in Eupora now.

Married in 1939 to a wife who condones, though does not read, the scientific fiction publications with which I am forever cluttering up the house.

A new arrival made her appearance in our home in the spring of 1940 and now threatens to tear the covers and backs off every magazine I possess.

I cannot truthfully say that any one thing gave me the idea for "Rendezvous in the Void," in fact, the ending of the story "came to me" as I was writing it (in one sitting), entirely different from what I had in mind originally. The story just flew through my mind and I "reached up and grabbed it."

suddenly exploding in their brains. They lapsed into nothingness.

BOTH men opened their eyes as consciousness returned at the same instant. Professor England brushed a nervous hand through his hair.

"What in the name of thunder happened to us?" he wanted to know.

But Bill Maddox certainly had no answer for him. He was staring in amazement.

"I don't have the slightest idea, Professor," he replied, "but if you will

down, down, down to an immense ocean of an amber liquid. The thick, luxuriant vegetation crept to the very edge of this mysterious sea. Overhead, an overcast sky, grayish, scudding clouds completely hiding the heavens from view.

"Where do you think we are, Professor?" asked the puzzled voice of Bill Maddox, as the immensity and splendor of the scene fell with full impact upon his gaze.

"We must have come out by some means on another island," answered Professor England. "There's another

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door just ahead. It's evidently the only way out. Shall we investigate?"

"I guess we will be compelled to, but after what happened to us in that other door, I'm slightly skeptical of improving our position any," said Maddox. "That's faster than an express elevator."

"I don't understand it myself," admitted England, frowning, "but I hardly think anything like that will happen to us this time. There must have been some sort of ray in the door that acted a little too strongly on our brains. Yet the purpose of a ray in a door is more than I can conceive right now.

"Another thing: looking through the archway from the other side, it appeared as if we were just going to pass from the big cavern into another room. Yet we awoke here high on this mountain, in a dome-shaped enclosure of some glass-like substance, with even a change of scenery. Well, let's try the door over there and go out and inspect this island. I don't want to tackle the door we obviously just came through for a while yet."

Professor England stepped toward the second door. As he did so, his eyes turned upward over it. In medium-sized letters cut into the glasslike dome and coated with a blackish substance to make the lettering show against the glass was the identical inscription that had been over the first archway: "Kitrick faggeleineur."

Bill Maddox saw it, too.

"This door ties in with the first one in some manner," he said.

"Then by going through it we have a chance to find out," decided the professor. "What do you say? Want to try the second door or go back through the first one?"

"I'm sticking with you, Professor. Whatever you say."

"Then follow me. I want to find somebody who can answer my questions. I don't recognize this country at all."

"I'm right behind you."

Professor England stepped firmly through the doorway, Bill Maddox on his heels.

A vast, whirling blackness again engulfed the pair. Spinning, spinning—then with sudden and awful brilliance the great white light exploded. Again the two intrepid explorers lapsed into nothingness. . . .

Professor England regained consciousness some few seconds before Bill Maddox this time. As the younger man got shakily to his feet he found his companion apparently in the same room they had left, a small, domed enclosure. Stretching before them a vast boulder-strewn desert wasteland greeted their eyes. In fact, as they turned in all directions the same sight met their gaze. Everywhere was a dreary plain, no hills, no valleys, no trees, no streams,—nothing but endless level ground, unbroken in its march to the horizon. The dome was the same, but the scenery had changed.

"Well, Professor, what's the answer this time?" Bill Maddox asked, a slight tremor in his voice as he instinctively drew back from the arid, stifling appearance of the country outside.

"The same as before, Bill," replied the professor frankly. "I still don't know. All I know is that there is another door and another identical inscription. I'm in favor of getting out of here the fastest way possible."

"Then lead on. All this must have a logical explanation."

Grimly this time the two men repeated their previous performances, stepping through the door over which was the same mocking, puzzling inscription—"Kitrick faggeleineur."

This time they did not awaken. . . .

IN THE year 3942 man's science had reached a pinnacle never envisioned even by the most far-sighted scientists of the past. In the great research room of the Solar Academy of Science robot workers were busily sorting for filing and preservation ancient documents. Some of these were obtained from even the bowels of the earth by means of the giant "M-Cars" developed in 2879.

Records that dated back to the beginnings of the "Great Era of Science" which began in the year 2000 were included in the collection. There was

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a special chamber for data which went back into ancient records. In this room, among other meaningless gibberish, there was a complete file of Mulantean newspapers, relics of that race of super-scientists that antedated Atlantis and Lemuria, these two races springing from the Mulantean people who reached their peak some 50,000 B. C.

The papers had been found imbedded, sealed and preserved, in a vast vault some forty miles beneath the surface of the earth in 3233 and had been in turn placed in a state of preservation in this room of the Solar Academy of Science.

Jan Callein and Vwen Tarranti, librarians off duty, walked into the room where the robots were tirelessly going about their work. For want of something better to do, the pair absent-mindedly thumbed through one of the old Mulantean newspapers, each page of which was necessarily encased in a transparent, plastic case.

"You know, it is quite remarkable," commented Callein, "that fifty-four thousand years ago these Mulanteans had the science and knowledge that these papers reveal. For instance, just read the translation of this article on atomic transportation headed 'Kitrick faggeleineur'."

Tarranti read:

The Imperial Scientists of the Liberator are pleased to announce to the public that one of the most astounding innovations in Mulantean history is ready for the people's use. The Scientists have discovered a method of dissembling atoms, projecting them wherever it is desired and there reassembling them. The discovery will make relics of our great space liners and freighters. In the end, however, everyone will profit. Engineers have already gone to Venus, Mars, and Krim—the second, fourth, and fifth planets from the sun, respectively—to set up receiving and sending stations. Later we intend to include Jupiter, Uranus, Neptune, Saturn and Pluto.

Although we will maintain technicians at all receiving and sending stations, it is only necessary for the maintenance of the machinery. To enjoy an excursion to these three planets for only 400 tera, apply to the general sending station in the fourth chamber of the Imperial Government Palace. Follow these simple directions and you will be able to make a sight-seeing or business trip of millions of miles in only a few minutes, depending upon the amount of time you spend upon each planet before stepping into the sending station to go to the next.

After you pay your tera to the attendant, simply step through the door marked with the inscription, "Atom Projector." In an instant you will find yourself on Venus. When you have enjoyed Venus' sights, step through the door marked with the same inscription. You will be transported to Mars. Proceed through the door at the Martian receiving station for your trip to Krim, the next planet out.

When you have seen the sights of Krim, of course the atom projector on that planet will dissemble the atoms of your body and reassemble them back on Earth. Caution: Never enter a sending station unless a technician is on hand! Should the receiving station get out of order due to a gigantic storm or electrical disturbance, or some unforeseen disaster destroy a receiving station unknown to the sending station in tune with it, you would be annihilated and your atoms would drift forever in the void. First come, first served—around the Solar System in a few minutes—for only 400 tera.

Next Issue's Winner: TWISTED DIMENSIONS, by DANIEL A. ALEXANDER

NO FINER DRINK FROM POLE TO POLE
BETTER TASTE...
PEPSI-COLA
REG. U.S. PAT. OFF.
BIGGER DRINK
Purity...in the big big bottle — that's Pepsi-Cola!

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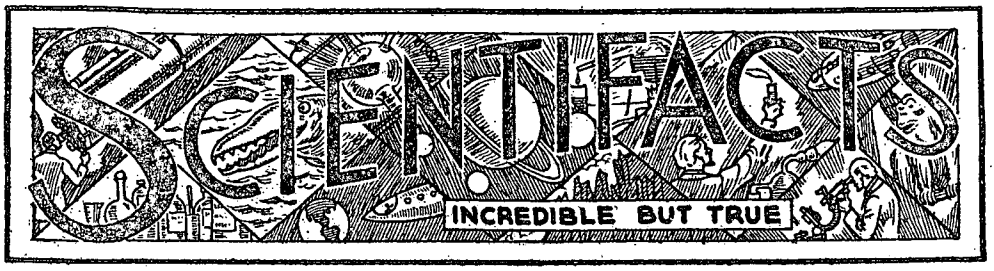

THE BIGGEST BIRD

CONTRARY to popular belief, the Great Auk or the Moa or the emu or the ostrich were not and are not the largest birds that ever lived. Of course the Roc, that fabulous bird of the Arabian Nights, and the Phoenix of fiery legend, never existed. True, there was the pterodactyl of the Mesozoic age, but it was a flying reptile, not a bird. That doesn't leave much in the way of large birds save that said Bronx cheer by a Ubangi, does it?

But there was a genuine giant bird that existed on the South American continent during the 20,000,000 years of the Cenozoic era. Flightless but winged and feathered, this huge bird stood as tall as a man, could run like a horse, and fight like a fury with beak and talons. A formidable engine of destruction, this bird held its own in the battle for survival against the biggest mammals of its day.

Zoologists have named this extinct bird Mesembriornis. The only known skeleton in existence of this feathered giant has recently been added to the Field Museum of Natural History in Chicago.

LOW-GRADE ASSAY

MARK TWAIN once called the world a wart in a humorous essay. Astronomers, running a more serious assay, are even less flattering. Thanks to the spectroscope, by which analysis of the chemical structure of celestial bodies is possible, scientists have discovered that Earth did not get a proportionate share of many chemical elements, although getting an excess of others.

Hydrogen, for instance, one of the most abundant elements in the universe, exists on Earth only in the ratio of one-half of one percent. In the atmosphere alone of the sun some sixty elements exist, hydrogen being a considerable component. More than

forty elements have been recognized and classified in Beta Pegasi by use of great helioscopes. The majority of the stars show much the same composition as our sun.

Earth is a poor specimen or sample of the universe. The lowly meteorites which fall on Earth, says Dr. Henry Norris Russell, seem better specimens, being high in content of iron, magnesium, sulphur, nickel, sodium, potassium and metallic sulphides.

AMAZING AMERICAN

KNOWN as the first civilized American, besides being a statesman, philosopher, musician, mathematician, meteorologist, astronomer, and many other things, Benjamin Franklin was also a scientist and inventor. Many of his discoveries and inventions are in use today as common and accepted facts.

He discovered and charted the general sweep of the Gulf Stream, discovered the identity of lightning and electricity, balanced diets, vitamins in the sun's rays, ventilation systems, breathing properties of skin pores, electro-magnetic nature of the Aurora Borealis, marsh gas as methane, broom

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corn, etc.

He invented daylight saving time, the harmonica, the street lamp, the rocking chair, the Franklin stove, duck cloth, the lightning rod and bifocal spectacles.

And he did all this besides being an author, editor, economist, postmaster, architect, soldier, diplomat, librarian—and one of the founders of the United States. More biographies have been written about him than any other one man, and the Encyclopedia Britannica devotes more page space to him than to any other person.

Sixty-six persons out of one hundred wear, or need, eye-glasses as improved by Franklin, and the Empire State Building in New York City is protected by his lightning conductor—as installed by General Electric—and has been struck, and unharmed, by lightning no less than a hundred recorded times since 1935.

THE LIGHTNING'S FLASH

LIGHTNING does strike twice in the same place—and oftener. The conditions which make a first bolt likely, generally occur again to make the chances excellent for recurring charges. But your chances of being struck by lightning are less than one to more than three hundred and thirty-four thousand. The menace to property is greater than to life, insurance statistics showing that more than thirty-five million dollars' worth of property is destroyed annually by lightning bolts.

Ben Franklin identified lightning with electricity in 1740, and Charles Steinmetz produced artificial lightning in 1920, thus capturing the natural phenomenon for subsequent scientific study.

SCIENTIFIC EXPLORATION

THE National Geographic Society of Washington, D. C., since being founded in 1888 "for the increase and diffusion of geographic knowledge," has played a vastly important role in the advancement of scientific knowledge.

Expeditions sent out by the Society discovered the Valley of Ten Thousand Smokes in Alaska, opened the Carlsbad Caverns in New Mexico, unearthed Machu Picchu—the ancient city of the Incas, unearthed and restored the city of Pueblo Bonito in Chaco Canyon, New Mexico, etc.

In collaboration with the U. S. Government and other scientific societies, this unique organization has sponsored everything from Dr. William Beebe's deep-sea explorations off Bermuda to the Stevens-Anderson record trip into the stratosphere to the height of 72,395 feet, as well as furnishing scientists and funds to study solar eclipses in all parts of the world.

Scientific inventions budding from this work have been such things as the sun compass, devised by Albert H. Bumstead, the Society's chief cartographer, an instrument which has greatly simplified air navigation in sunshine.

Under the leadership of Dr. Andrew E. Douglass, based on the work at Pueblo Bonito, an accurate tree-ring calendar was formulated which extends the chronology of southwestern United States back to eight centuries before Columbus crossed the Atlantic Ocean.

REVERSE EVOLUTION

THE recent annual rodeo, a distinctly American institution, at Madison Square Garden in New York exhibited a small herd of some thirty of the rapidly vanishing Texas Longhorn cattle, the ancestors of which were brought to the New World by the early Spaniards. Sight of these pitiful remnants of another day brings

to mind the urus or Roman aurochs, extinct progenitor of the present-day domestic cattle.

The aurochs was a large, long-horned, wild ox which roamed the forest of Europe in the days of Julius Caesar. By selective breeding down through the centuries the wild cattle were changed into the well-known domestic breeds of today.

Dr. Heinrich Heck and his brother

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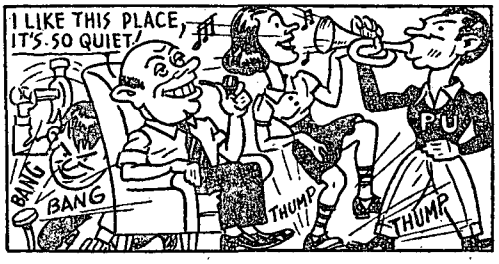
conceived or embraced the idea of reversing the process and trying to breed back to the original ancestor. Working with Hungarian plains cattle and Spanish and French breeds of fighting bulls, they have reeled back the centuries and produced once more the urus of old.

Because the strain was there, no matter how deeply buried, the result has proven most gratifying. Modern uri cannot be distinguished from the drawings of the last Polish uri known to have existed, and once again the ancient *Bos primigenius* proudly roams the plains of Europe—unless World War II has exterminated him again.

THE SEA OF SOUND

KEEPING pace with the march of our streamlined civilization is the constantly increasing sea of sound. The human ear has a wide range of sensitivity, picking up audible sound frequencies from 30 cycles to 18,000 cycles per second, a ratio of 600 to 1. A great deal can be said upon the subject of sound. Let's condense it to the mention of two remarkable new developments—the microphone and the thermionic vacuum tube.



These two instruments have made possible the modern sound level meter. Sound level is now measured in what is called decibels. For example, a whisper registers 25 decibels, while the roar of Niagara Falls measures only 100 decibels.

This seems a small variation of range until we stop to consider that the loudest sound the ear can sense—beyond which the result is physical pain—measures only 120 decibels, a million million times the power registered at zero.

With these new instruments, designers and architects and engineers can study and reduce noise in machinery, street traffic, factories and office buildings. We may yet be living in quiet surroundings despite the speed of our era. (But nothing is promised about the private uproar which may exist in the home.)

VARIATIONS IN TYPES

THERE are only nine primary types of all the flowers in the world, of which four are rare. The vast majority of flowers are developed from hypogynous, perigynous, epigynous and epigynous with hypanthium—in plain English, magnolia, geranium, rosa, baptisia, asarum, helianthus, cereus and fuchsia. Or is this all plain English? No wonder flowers cost so much money.

On the other hand, there are at least twenty-five thousand known species of birds—at a conservative estimate. And (hold your breath) there are upwards of six hundred thousand kinds of insectivora.

I have no figures at hand on the extant mammalia, but an amazing variety of man alone stem from the five great races, thronging, for instance, the streets of New York and all trying to ride the same subway train.

ODDS AND ENDS

BENZEDRINE, medically administered, is good for hang-overs because it is antagonistic to an alcoholic enzyme which leaves aldehydes behind to interfere with brain-cell breathing. Benzedrine prevents the aldehydes from forming . . . In spite of the fertility and variety of our vegetables and fruits, it is not commonly known that much of our garden seed comes from Europe. The conditions imposed by the present European conflict have stimulated the cultivation of seeds for next year's planting here at home. The State of Florida is leading with experiment stations.

How are your figures on odd measurements? Check your accuracy or memory on the following: (Answers on page 123.)

How long, or tall, is:

1. A palm
2. A hand
3. A span
4. A cubit
5. A Bible cubit
6. A military pace
7. An ell (Eng. cloth)
8. A nail
9. Four nails
10. Four quarters
11. A shoe size
12. A meter

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DEATH ON THE SIDERITE

By D. D. SHARP

Author of "Three Worlds to Conquer," "Eternal Man," etc.

We found Doric frozen upright, dead.

Adrift in the Void, the Crew of the Space Scout Awaits a Nameless Doom!

THE chances are no man will ever find these notes I write. This black and barren rock island seems lost in endless space, and in its intense shades savage denizens of the void lie waiting a new attack.

But three air-tight compartments are left in the ship. Three Earth-made cells barricading Earthmen against the void. There were five hundred and ten human beings alive and eager aboard the *Space Scout* when we crashed this siderite. All of us were from Terra, in high spirits to try our luck for platinum, which had been newly discovered on the fourth moon of Jupiter. There was also a party of scientists going out to hunt strange bugs.

The ship had been far too heavily loaded. It had raced for the diggings with engines vibrating to shake the

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decks like a temblor. Then her meteor deflectors jammed, and we bellowed against putting into Eros until the captain drove on without repairs.

Half a million miles off Jupiter this chunky siderite swept up on our tail, so quickly there was no time to swing away. Only five of us, far up in the nose, escaped.

Most of our drinking water boiled off at the time of the crash. Our spatial vision itself is barren of anything that might prolong our lives, just a mineralized rock captured by the gravitation of the solar system's biggest planet.

Milligan is a prospector. Even here he garners little nuggets from a mineral reef. He is worse than King Midas. Only a void-mad fool would dig platinum when imprisoned in space. Yet his gray-green eyes appraise each worthless lump of ore he hoards against inevitable death.

Doric, the biochemist, is just as bad. He prowls every perimeter of the siderite like a fly crawling about a cobblestone someone dropped down a deep, deep shaft. He is collecting microscopic eggs with the fine mania that Milligan has for ore.

Tony, my pack-boy, is space-daft too. Claims he sees ghosts trailing flimsy garments across the stars.

Robeston, the anthropologist, is as unapproachable as his title. Where all men are equal, he plays the gentleman.

Milligan calls his platinum-hoarding good business, but Doric has a fine word for such foolishness. He names it research. Unlike Milligan his manners are soft. Over there he sits with his emaciated legs wound around his stool, bent over a microscope.

He stares with both eyes wide open, though only one is at the eye-piece. The spill of his work, tube-racks, slides, plastic models, are scattered to remind one of a college lecture hall. He talks of schizogenesis. Milligan answers with a sneer, like a harsh duet singing off-tune monologues to the same music.

The ship is dead still. Silence is lord of this ugly world. Cold, bright stars stare fixedly far down, and up, and all around, except where Jupiter occults them like a big umbrella floating down endless space. Since the ship stopped spinning, there isn't enough gravitation to strangle a man with his neck in a slip-noose. A healthy jump would float one away like dreamland.

No one imagined there was anything alive here on this vacuum-bound planetoid. I've a billion cosmic miles to my credit, and I never saw anything in the void that could flutter an eye-lash or whisper a sound.

So I watched Milligan float down the rimrock to his mine, while the professor of biology prowled the caves for ova, not dreaming there was a more deadly menace than taking too much time off from repairing the lifeboat.

Then we found Robeston with his lung-cells exploded and his compartment drained of air. He was frozen stiff where he lay, with foamy blood hard as frost over his mouth.

DORIC was pretty lucky at that. If Robeston had been a sociable cuss, Doric might still have been rooming with him. As it was, Robeston kicked him out, microscope and bench, soon after the crash.

A flashlight is weird and incompetent in a vacuum. Milligan's opened but a spot of view as we got into Robeston's room. Like a round hole in a very black curtain, it moved up and down and all around, while we wondered what had drained the compartment. My own light caught Milligan's face where it drooped below big goggles like a tray of fallen dough. One of his hard green eyes was almost closed, while the other bored suspiciously at possible clues.

Tony, my pack-boy, moved step by step further from the head. His suit phone was on. I heard his excited breathing as prayers were whispered to his favorite saints.

Cold of the void was in the room. Doric stood near the open door, beating his gloved hands together. He glared into my light, lips tight as bowstrings across his teeth, then strode down the exit corridor. I fol-

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lowed. We reached the airlock together, raised the pressure to fifteen pounds, and passed into the warmth and sanity of breathable compartments.

"Leaky seam," he guessed when his helmet was off. "Too bad for poor Robeston."

Milligan and Tony joined us, to take off their space suits. Doric slid to his work-bench and began indexing some slides of stuff he had scraped up from a cave.

"Time we worked more on that boat," Milligan growled, with more unsteadiness in his voice than I had before discovered.

Doric frowned. "Go ahead. I'll catch up with my share. I can't stop with these ova for a few days, anyway. It's important."

He raised his pale blue eyes to defy Milligan's domination.

"More important than you imagine," he said.

Milligan blustered but Doric was obdurate. I was surprised.

"Mule!" roared Milligan. "I'll give you until I dig just one more poke of osmiridium!"

"And blow all our chances!" I shouted.

"Then you and Tony get the boat down," Milligan shot at me, as though he was the bo's'n. "Two can slide her out and smooth down for new plates. For ore like this I'd sift the clinkers of hell if Old Nick himself was on guard."

He strode into the kitchen, lifted down a slab of salt pork from the larder. I followed him in and shut the door.

"If we're to get away, let's mend the boat, then get what we can if there's time. That's common sense."

He drew himself haughtily aloof, spat a wad of chewing tobacco into a garbage can. His indignation rose like yeast on a warm shelf.

"Me, give into that mule-headed, Sally-fisted chaser of bugs? Him back *me* down? When he gets scared enough to take a riveter in his lily-white mits, I'll hang up my pickax!"

Against such talk there was no power in persuasion. So he fried salt pork, studying the pan in silence. After a moment he laid down his fork, threw a leg over a high stool.

"Pierre," he said, much more soberly. "It had to be done by ghosts."

I MUST have shown astonishment, for he went on more cautiously.

"Found something mighty queer in Robeston's compartment after you left. The air-cocks ain't been opened. Can't be. They're twisted out of shape so a giant couldn't turn the wheels. And every seam's tight. Couldn't be done by anything less than a ghost."

He gave me the same hard stare he had given Doric, a stare to run chills down a man's spine. He believed in spirits no more than I. He was a hard-bitten voyager of interplanetary seas. By "ghosts" he meant alien and weird beings bred of unknown phenomena. In a way it suggested fear he'd never admit in open speech.

After that I thought Milligan might back down to help in refitting the lifeboat, but I was wrong. Stubbornly, and with some avarice, he got his ore sack and pickax. When Doric refused to abandon the microscope, he slid down the far rim of the siderite to dig at the mineral reef. Tony and I watched rebelliously, but he looked neither right nor left.

The boat was in worse shape than we thought. Not only were hull plates missing; but decarbonizers were so woefully battered, our escape would need to be made by use of emergency cylinders of oxygen.

Without need of davits, we got the lifeboat to the surface and out of the ship's shadow into the queer, shadowy sunlight. Then began new problems. We ourselves weighed no more than a mouse in a Kansas granary. Pressure on our wrenches held us off the ground. Every blow we laid, every bolt we turned, every bar we pried, first demanded that we find a toehold to give more leverage than our weight supplied.

When we wanted to turn the boat, we lifted it high over our heads, like two ants under a lettuce leaf. On earth that miniature spaceship weighed four hundred tons!

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Exertion made us hungry. We went inside, to find Doric still jiggling the screw which focused his microscope. Tony granted him one of his most passive, most sullen stares. My own expression must have been that of a man who has worked too hard showing contempt for a "gold-bricker."

"I'll do my share, I tell you." Doric was nettled. "It's more important now to study these cells."

"And die in a cell—if we loafed like you're doing!"

Doric took his gaze from watching whatever bug was fixed there under the focus of the glass. He smiled with a great and confident patience. It wasn't a bad smile. His teeth were beautifully small and well brushed. Yet it turned me sour.

The man could smile with Robeston hardly a day silent in the next compartment, killed where he slept. But for mere chance, Doric himself would have suffered the same fate. I wanted to wipe off both the smile and the dainty moustache above it.

With the air of a man much misunderstood, he turned back to his bench. Imagine a man studying ova he finds in a cave on a rock like this! Imagine Robinson Crusoe picking daisies and weighing their petals and putting the figures down on a bit of bark!

Robinson Crusoe was on his own doorstep, compared to Doric. *His* island had air and water. *His* sea was stuff one could drop a hook into and try for fish. *His* danger was such that he could meet it with gun or cudgel.

"We can make it to Jupiter," I snapped, losing my temper, "if we've got the guts! There's an outpost on the eighth-banded strata."

JUST then the airlock door opened and Milligan came in, swinging a little cotton seamless bag knobby with new ore. He beamed at me with pride and satisfaction.

"This is passage to Earth," he rumbled happily, "It ought to fetch a ship."

"Around and around and around, like the mouse in the jar," Doric said softly.

That hit me in the imagination. A mouse in a jar. An experiment in high school every boy remembers. Air pumped away to cause vacuum, like that on this barren rock. The mouse running frantically around and around, mouth open, pulse rapid, rearing upon its tiny haunches to scratch at the invisible wall. Trying to run up the unknown barrier as the air thinned, hunting an opening where nothing solid seemed to be. Then around and around the bottom of the jar again.

"Enough of that!" bawled Milligan, watching me. "We're men, not mice. I've been through worse and come out okay."

Doric merely bared his fine teeth behind the brass barrel of the microscope.

"Death seems present on all planets," he said after a moment. "But here under a glass is immortality. Life is a persistent customer," he added, a note of infinite tragedy in his smooth voice. "So persistent it has been scattered sphere to sphere by the whim of siderites. The fertilized ova on the slide here may have nested God knows in what far corner of the universe."

"Nuts," I broke in. "So what?"

"If you ain't going to work, get your bugs to hell out of here!" roared Milligan, doubling his heavy fists. "You get a man's goat, staring there hour after hour like a blind owl."

"Good enough," Doric agreed amiably. "I'll move again. If Robeston hadn't kicked me out, where'd I be now? Pierre, you're an observant lad. Want to take a look at this?"

"The hell you say," I blustered manfully, but went over to his bench just the same. Shutting one eye, I glued the other to the eye-piece. I could see nothing very important. Dark little eggs were strung together. My thoughts were not on them at all. I was wondering superstitiously if Doric's guardian angel was moving him out of Milligan's compartment.

"Bugs hatched from these ova may break down a soil deposit from the

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siderite," Doric explained patiently.

Milligan snorted and pressed the buzzer. Tony dutifully responded. Obediently he took one end of the table, and Doric put aside the microscope to balance the other. With magical strength they floated in this gravity-dead siderite across the floor to reach Compartment Number Eleven.

When Doric came out again he had a placard in one hand, a strip of adhesive tape in the other. He stopped outside the door to fasten the card on it. It read:

PRIVATE
MAN WORKING

Milligan damned him loudly for being a fool. When Tony and I went down to spot-weld the lifeboat, the ore prospector joined us.

It was a trying job. Gravity wouldn't draw the sealing-flux between the plates. We used a dozen rods to get results we should have obtained from one. Twenty straight hours we worked. At last, completely exhausted, I started for the spaceship. Milligan and Tony were still working somewhere down in the boat.

I found Doric waiting in Milligan's room with the lights out. My flash caught him by surprise. Never have I seen such anxiety in a man's face. He pulled himself together at once to grin pleasantly, but I knew then that his nonchalance was but a front. He was afraid, as much or more than the rest of us.

I SWITCHED on lights, wishing I hadn't discovered his weakness. His previous unconcern had bolstered my own courage more than I had recognized.

"We've got to get away from this rock!" I whispered to Milligan when he came in. "Something evil is stalking around. Even Doric knows it!"

"So you've decided to escape?" snarled Milligan, his tone betraying lack of self-control.

To make a bad situation worse, the siderite chose just that time to swing into the shadow of Jupiter. During the blackout we worked harder than ever to repair the lifeboat, while Doric burned precious power to light his fool research.

No man who hasn't been in a blackout in space knows how hope fades out when the sun is down for days. Jupiter was a great pale disk of weird shadows, except for the great red spot which floated around like the yolk of a turning egg. When our midget world rotated toward the void, there were moons enough to make a drunkard take the pledge.

Sometimes Io or Europa and two or three of the smaller satellites moved with varying strides across the sky. At other times, Ganymede moved into position. Callisto, upon which were men of Earth, stampeding to stake claims for ores far richer than California gold, also caught our attention.

All the time the heavens changed we worked, hammers striking steel as soundless as footsteps in space. A twenty-pound sledge upended a man, if he forgot to tuck his toes under the catwalk as he swung. A careless jump took him toward the heavens, like a Hindu boy on a magical rope, never to come down until fished in by his mates.

Ten periods of the ship's chronometer we worked before a ray of sun broke against the dusky perimeter of Jupiter, and none too soon for sanity. I made a holiday by soaring completely around our world, sometimes on my feet, sometimes upside-down.

As I came back over a precipitous cliff, there under me was Professor Doric, barely to be seen in the little cave where he had found the microscopic ova. He had a magnifying glass and seemed to be searching the crusted seams of the rock. So intent was he, my shadow inked out his glass before he suspected anyone near.

He leaped to his feet. Teetering for lack of body weight he hid the glass behind him. Then he recovered his poise, motioned me to join him.

"Pierre," he said, "I'm all in." Indeed he was ghastly pale. His eyes were bloodshot and anxious.

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"See a ghost?" I demanded, more in earnest than I let on.

"I hardly know." He passed a hand against his helmet, as though he had forgot he was in an airsuit. "The siderite's whirling until I'm half-seas over. I came out to—to hunt a parasite. A parasite I must find, Pierre."

I tucked my toes under a niche of the cavern and put a hand on his shoulder.

"Let me help you to the ship?"

He shook away the offer. "For God's sake, Pierre, go! Go—leave me to myself." He stretched his pale lips into a smile. "I'm all right." His teeth gleamed whitely in the ghastly sunlight, as though set in death.

"You think there *is* a ghost?" I was uneasy and amazed.

"Not dead men," he muttered. "Would to God they were. Leave me alone, can't you?"

I did leave him to hurry after Milligan. But Milligan was no longer at the lifeboat, so I went back to the ship.

THAT was the last time anyone saw Doric alive. When he failed to come in at mealtime, Milligan went down a little corridor to knock on his door. I watched a moment, then followed. Milligan was pulling on the knob but the door was stuck. There was no lock. That was the reason Doric had written the impudent placard still hanging above Milligan's fist.

Only one possible strength held it shut. Air pressure of the room we were in. Vacuum had taken one more compartment!

Milligan's doughy face drained a shade more pale. His voice was harsh. He called bullishly, as though to cower whatever thing might still be hiding there with Doric in the room beyond.

Doric's mood, I remembered, hadn't been healthy, but he wasn't the sort to waste air we needed to survive. If he wanted to finish himself off, he could simply have opened his space suit down there in the cave.

Tony came up softly. "*Segura,*" he moaned. "Shee come like when Señor Ro-be-ston go *murio*. Shee come like thees, white, all white—through the wall!"

"Shut up!" rasped Milligan. He picked up an electric torch and started for the airlock. He spoke again, more kindly, unconsciously picking up Tony's pidgin English.

"She gone now. No come back. You stay. Watch for door. Good boy. No worry."

Tony accepted the charge but his eyes followed longingly.

Of five hundred and ten, three Earth beings now survived. Two of us were armed, determined to find and finish the destroyer. The other—more securely, we thought—waited while we went down to battle the unknown.

I felt a great compassion for Tony, even there in the safety of a sealed and brightly lighted room. He had faced many perils with me on many a voyage after minerals. He was brave enough against known dangers. But it must be frightful to be all alone with an unknown thing around, a thing which found its way through steel walls.

To reach Number Eleven now we had to go out around the ship and come in by another corridor. As ethereal as spirits we soared down the ship's shadow, bright sunlight making day beyond, except where lay the silhouette of protruding pinnacles. Shadows here were as night. Without air there was no reflection, no middle shade between bright day and intense shade.

Milligan cut on his torch. Its brightness flowed smoothly along the even surface, fell blackly into deep pits. We entered the belly of the ship through a breech in the hull, reached a familiar corridor upon which opened many doors behind which dead men now slept. Their bodies lay preserved to the end of time by the sterility of the void.

The coal-black Number Eleven Compartment invited us to enter. Like swimmers in a quiet stream we floated through. Milligan's spotlight hurried here and there. It found Doric, mouth wide, eyes staring, foamy blood frozen where it had

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boiled out from his lungs.

He was out of bed, but clad in pajamas, frozen upright in a chair beside a small writing table. A trail of red was across the floor. His hands rested on a sheet of writing paper, which was mostly crimson now. I stooped to read. There was but an unfinished sentence, the beginning of which was blotted by blood.

"—and the damned things are hiding in—"

"What do you make of it?" I asked, trying to remain calm.

Milligan cleared his throat, played his light around the room.

"Hiding inside the ship," he said. "Let's take a look."

WE left the professor at his desk and began searching the deeper bowels of the vessel. Dead men were everywhere. They lay in dungarees crumpled on the spider stairs, or with arms dangling through slats of the upper catwalks. Men in pajamas remained lifeless in their bunks. Women in slacks slumped in their chairs.

Men stood at the levers, at lookouts and at shaving tables, with gray, frozen faces staring in dumb horror at their dead eyes. Bubbly frozen blood gave telltale evidence of the suck of vacuum on their stifled lungs. Throughout the ship there was nothing that moved, nothing visible that might have the power to pull open a door against fifteen pounds of pressure to every square inch, then close that door when vacuum came in.

"No use," Milligan said in a voice so low it sounded like cotton was in his mouth. And I was glad he'd had enough.

It was good to go out upon the open rock again, though we knew then the Thing must be outside, not in, regardless of Milligan's interpretation of Doric's warning.

Soaring abreast we explored caves and shadows, dropping a spot of light suddenly into a cranny, popping it quickly around the shadowed side of a pinnacle. Above our heads floated a bizarre array of man-made satellites, caught by the feeble gravitation of the siderite; broken pipe, casks, articles of many kinds from the ship's stores.

Here and there cold veins of metal had frozen air spewed out by the ship, to turn it to powdery frost. That air had been the first to touch our barren little world in a billion years. But we saw no moving thing, except the shadows of our legs, which stretched far behind us, and the silhouettes of the rocks we passed.

I did wonder if the frosted air, sucked from the wounded ship or funneled off from Doric's room to join the ponderous mass of Jupiter, might not have been Tony's ghost. It was a bracer against wild superstition, a bracer I needed; for we were now no more than primitive men in awe of the vast unknown.

"How are we ever to get away from here, *Señores?*" stammered Tony as we returned to the ship.

"The lifeboat, boy," rumbled Milligan. "See them sacks? Think I'd go packing down stuff like that just for exercise? Not me, boy. We'll sell it on Earth, and be rich enough to outfit for Saturn, if it strikes us that way!"

"*Segura que si!*" agreed Tony, but his next words were far more sincere. "The white one pull open hees door, may-bee?"

Milligan nudged me in the ribs and gave a lame excuse for wanting to have me alone. I followed him outside under bright Io and down to the lifeboat, big as a presidential yacht.

"Pierre," he said anxiously, "we're in a spot. We've been losing too much time. Doric most of all. He paid for it, so pass that up. You've been writing a story for the archaeologists, and Tony plays that French harp and is scared to peep out. The honeymoon's over now. We'll work the clock around before we sleep again."

We did.

Weary men we were when we went back into the airlock. Milligan ran pressure up to fifteen pounds, to balance the cubicle against that of the next compartment. But when I pulled at the door—it wouldn't open!

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Milligan pounced upon it. It was stuck solid. Crinkly horror ran through my scalp as Milligan's shoulders seemed to stiffen for a blow. Then he grasped the valve wheel and spun it open.

Air whistled from the cubicle. Floodlight faded up the wall like sunset up a mountain peak. The room grew dark, though the floodlights were bright overhead. Vacuum had robbed it of all reflection and sound.

I PUT a hand to the door then. Milligan caught my arm.

"Brace for a shock," he warned.

When that had time to soak in, he opened the door as easily as though it had never been stuck at all. We both knew well what *that* meant. Milligan's room had been drained! Mine alone remained, a last fortress in which to barricade ourselves against the unknown destroyer. We hoped desperately Tony was there.

"Tony," I called into my "mike." "Tony!"

The place was utterly dark. Milligan's torch spotted objects here and there. The breakfast table with unwashed plates, lumpy bags of ore unmolested under the bunk, Tony's gun, butt up, holstered against a far wall. They came to view where the spotlight wandered. Everything else was invisible, though the ceiling lights were full on. Opalite shades glowed softly like lumps of pale radium, luminous but not illuminating.

We found Tony beside the electric stove, head drawn far back, hands fallen into his lap, an harmonica clenched in stiffly frozen fingers, blood bubbly upon his lips like live yeast under a frozen crust.

My legs wouldn't hold me. I sat down. Now there were but two of us! Three already had been mysteriously snared. Two somehow seemed much more desperately marooned than three.

"Hell!" growled Milligan. "Pull your legs under you. Want me to baby you in my arms?"

He dragged open a drawer and gathered up a few tools from its depths.

"Let's get the stove loose," he handed me a Stillson wrench.

In an hour we fitted up my room to make a satisfactory bedroom, pantry and kitchen, with Milligan's cursed platinum under the bunk we nailed up for him. Tony we left with his harmonica on his lap, to sit where he had died until the end of time. If there had been soil I'd have demanded that we bury him.

After that we worked without sleep, afraid to relax one hour in the race against whatever evil Thing it was that besieged us. Two men could still get the lifeboat welded and take her off to Jupiter. One man alone could never spot-weld the plates.

Fifty-four hours it took to seal the hull. Twenty more to bring in supplies. By then we were dead on our feet, prodded to keep going only by fear for our lives.

"Tomorrow," said Milligan, "we make the try. Let's go get some sleep."

"Let's get away from here," I demanded. "Now—today!"

"Tomorrow," he insisted doggedly. "Two are few enough to handle her. We'll need our wits for taking off. I'm drunk for sleep."

He was right, of course. Two sleep-logged men risked a crash with a boat the size of ours. Yet superstition was whispering. As fine a test pilot as ever took up a rocket had told me once he was quitting. He had just one more test to make. That "final" test was his last.

Milligan swore and called me names, but I held out. In the end we went to the ship for some personal things we needed, the log of the *Space Scout,* the helio-compass, and other navigating instruments.

While I was in the pilot room Milligan went to our room to pack his belongings. When I went in he was dead asleep.

That whimsical luck which takes a man safely on far and dangerous voyages, only to trip him for a broken neck on his own doorstep, had overruled me. I knew it as I stood there with loaded arms, listening to Milligan's rumbly snores. Shaking merely

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caused him to groan. He wouldn't be aroused.

PREMONITION is too powerful, at times, to be huffed away by common sense. Death was near that room—and I knew it. There was, however, one thing I could do. That was to keep watch until Milligan got his rest. It seemed really a fine solution. One of us then would have a clear head for the crucial take-off, and we'd both be safe. So I sat down, dropping my load to take down a new-type machine gun and rest it across my knees.

After a few minutes, despite my determination and that awful certainty that deadly peril was upon us, my head nodded. Shortly I was fast asleep.

I woke strangling for breath. There didn't seem to be enough air in the room. *The Thing has got in,* I thought. It's over there at the air-cocks, draining them now! My bugging eyes slid cautiously to fix upon the murderous being I suspected was already in the room, and my fingers tightened on the machine gun.

Lights were full on, but shadowy corners lingered at the end of my bunk and below a big table at the end of the long room. My ears were popping to burst their drums, I couldn't be sure. There *seemed* to be sounds. Whispering sounds behind the ore under Milligan's bunk by the outside wall.

But there was nothing at the air-cocks. The wheel was hard down. Then why? What was strangling my breath?

There! That was a new sound filtering into the stillness, a queerly feeble wail, like the cares of a summer breeze, or a distant pack of baying dogs. At once, I knew it was the voice of the unknown terror whimpering at the compartment walls, yet I could not see whether it was outside or in.

Even when I became certain it was inside the room, there was still nothing visible, nothing my eyes could see at all, even when its breath sucked at my mouth, drawing the air from my throat. My fingers went through it. There was only that clutch upon my throat, that sound coming closer and closer.

I screamed, my voice unbelievably throttled, choking down my cry for help.

"Milligan!" I gasped. "Milligan, wake up!"

Stumbling up to arouse him, I swallowed my cries with a crawling emptiness in my stomach. Milligan was not in his bunk. He was not in the room at all! I was alone. Alone!

My frantic efforts quieted. It wouldn't do to lose my head. I was alone. Alone with all the empty gulf of the cosmos around me. I mustn't lose my head. I must be cunning, and wise, and quiet. Unknown devils with unknown shapes and unknown powers were in the room, sucking at my senses.

They were in the room! In the room! Monstrous, invisible! Vampires, vampires of the void, invisible, and deadly, tenuous and untouchable as the emptiness in which they lived. They moaned and wailed. They were coming for me right through the solid steel, like mercury through a chamois bag, right through the wall. Their fingers strangled me—squeezed blood from my throat—clutched at my lungs—

I swam dizzily up from oblivion, to find myself in an airsuit and in Milligan's big arms.

"We beat it this time by a split second," he rumbled. "Lord, you were almost gone!

"Take it easy," he cautioned, when I tried to speak.

"Hurry!" I gasped. "Take off from here. They may be anywhere—everywhere! They—they're invisible!"

He soared a bit higher, in this gravity-dead void, and involuntarily turned his head to look back at the ship.

With a few more of those soaring strides we gained the lifeboat. He pushed me gently into the bunk.

"Boat's ready to go. Just took the compass down and tested her up. Got back in the nick of time. Feel better now?"

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I was too limp to nod, so I lay and stared past him through the viewplates, watching pebbles that lay around the ship, watching for them to move without apparent cause.

"Back in a minute." Milligan turned for the airlock. "Better have an armful of emergency oxygen aboard."

"No!" I begged. "Don't go out there again! Let well enough alone —please, Milligan!"

"Okay," he agreed reluctantly. "Now a look-see at the compressors and we'll open her up." But I knew he was going anyway.

He was back quicker than I expected, dumping his armful of cylinders to dust his hands. There was a grayish, metallic powder on his palms.

"Pierre." He tried to be composed. "The devils have drained them!"

He pointed at the indicators. Not an oxygen cylinder he had brought had as much as a pound!

"The dust on them is moving!" I cried.

He squinted at me unbelievingly, then took out a prospector's magnifying glass from his vest pocket. Through the lens we saw masses of tiny, flat-headed worms, gnawing into the steel!

"That damned professor!" gasped Milligan in angry amazement. "I knew Doric was playing around with our lives."

Sweat broke out all over my body.

"I'll argue that point later," I said weakly. "But first, get rid of those damned cylinders!"

Milligan started, and grew pale. He gathered them up in his arms and rushed to the airlock. I sank back on the bunk, too spent to do anything or say a word.

Moments later Milligan was back and at the controls. With intense precision—I marveled at the man's steel nerves—he moved the blast levers and we took off.

Outside, pebbles moved, apparently of their own volition. We were free! Free of this barren siderite! I mopped my forehead, and then suddenly everything seemed to blur in a great, drowsy fog.

When I woke up, we were headed safely on our course back to Earth. I took over the controls while Milligan, gruff, faithful, a man sturdier than mere flesh and blood, sank onto the bunk and began instantly to snore.

There isn't much more to say. On the trip back, we found time at last to isolate the cause of our frightful tragedy. The tiny, insidious worms had done the trick. They had hatched from the ova Doric had so insistently, brought into the ship.

Through some strange chemical function, they were mad for oxygen. They had perforated steel compartments, to suck out every drop of air.

"But how do they live?" Milligan demanded. "There's no air on that siderite!"

We couldn't answer that question, of course; not then. I knew as well as he that all living creatures must breathe. But eight months later, I gave specimen worms to a biologist who had been one of Doric's associates. *Dead* specimens.

HE GAVE the answer. Natural selection on that siderite had developed a life-form adapted to a vacuum. The worms had a second stomach, which digested rock to dissociate oxygen contained in that rock, and pass it on to the lungs.

These vacuum creatures *ate* their oxygen—instead of breathing it.

"So that's it!" Milligan said gruffly when I showed him the written report. "Might have known Doric would be the death of us all."

"It wasn't his fault," I protested. "He didn't know he was playing with fire. Besides, he tried to warn us as he died."

Milligan's eyes smoldered. "That's besides the point. Pierre," he said, slowly, almost solemnly, "there are some things that we ought never to look into. Things that a man wasn't intended to know."

I'm afraid I can't take quite such a viewpoint as that, even after all that happened. And yet—what a different report I could have written, had Doric only been content to let well enough alone.

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MEDICAL NOTE

By ALEXANDER SAMALMAN

Author of "The Changer of History," "The Lost Hour," etc.

TOM SMATHERS was in a critical condition.

"Dr. Tempo," he spoke faintly, "the last treatment you gave me didn't seem to work. I thought the Ninth would do me some good, but the choral was too exciting. Dr. Tempo, I feel that I need the Fifth."

"The Pastoral is what you need," I said gently. "The Fifth is too stimulating—it might affect you the same way as the Ninth. I've ordered the Pastoral and it is due any day now."

"Are you sure?" my patient asked entreatingly. "I thought I needed. . . ." His voice fell off to a murmur.

Sad case, Smathers. A victim of the space-ship building industry. His work took him to high altitudes, and one day he returned to earth and was careless about adjusting the atmospheric balancer. He fell into the hands of a quack who mistakenly believed that swing would help him.

After a month of the famous Benny Goodman treatment, effective in many cases, particularly as an aid to digestion, but useless as far as Smathers was concerned, he came to me a battered, broken man. I immediately prescribed large doses of Beethoven, and for a time the treatment had good results. But now I began to doubt my own judgment.

After all, musical therapy was still in experimental stages, although its potentialities had been glimpsed as early as the twentieth century. Later, Dr. Rithem had won the Nobel Prize for his discovery of the curative powers of harmo-melodic vibrations when administered through the proper instrument, his own invention—a vast improvement on both radio and phonograph. This invention, the Dynamic Sound Ray Case, gave music new vibrational qualities that brought out its full medicinal value.

Dr. Barr was visibly agitated

The ingenious instrument was happily a moderately priced item to produce. But the special recordings were beyond the reach of the average individual, and acute shortages existed in the hospitals. Just let the

Dr. Tempo Averts a Therapeutic Crisis!

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Earth get involved in a war with Mars or Jupiter, and there'd be funds for every need, but when it came to appropriations for healing. . . .

Worst of all, Dr. Rithem had been a great scientist, but a poor business man. Hence, both the Dynamic Sound Ray Case and all save the early recordings were tied up in the control of the Medical Music Trust. This monopoly gave me many uneasy moments.

AS I passed among my patients, again and again I was asked for this or that harmo-melodic treatment which was out of the question. For instance, I simply was unable to obtain the world-renowned Mahler treatment for nervous disorders. The budget wouldn't stand it. In vain I argued with the Board of Trustees, but was invariably told to stick to Bruckner in such cases.

I approached my favorite patient, a mere chit of a girl, little eight-year-old Eleanor Day. She smiled up at me bravely.

"The Bartered Bride?" she asked almost brightly.

"It will be here almost any day," I promised as cheerfully as I could, wondering when the devil it would come. "Just be patient a little while longer, and we'll make a well little girl of you."

Just as I was beginning to make real progress in my work, when it seemed that the worst problems were solved and all would be clear sailing, a calamity occurred. It is difficult to convey how devastating, how disruptive was the trouble caused by the Medical Music Trust.

In retrospect, I am willing to admit that there may have been some justice to their demands. But at the time it all happened I was madly incensed.

The contract which the hospitals had made with the Medical Music Trust having expired, the Trust demanded such a general increase in rates that all worth-while therapeutic music became prohibitive in price. To top it all, the Government put an additional tax on the Dynamic Sound Ray Case. We were in a bad way, and so were our patients.

There was dickering back and forth for a matter of months, the Government sluggish to intercede. Finally, having reached no agreement, the Medical Music Trust withdrew all of the music it controlled from the use of any of our hospitals.

To understand the extent of the tragedy you must know that the Trust owned the therapeutic rights to all of the specially recorded musical treatments produced after Dr. Rithem sold out to the syndicate. That left only the early recordings made by the worthy doctor. Precious few, mostly the work of an early American called Stephen Foster.

On the strength of this the Government refused to intercede in the dispute, holding that enough music was available for all practical purposes! Little did they know! Had there been a doctor in the House of Representatives we would have been saved!

Imagine curing dropsy without Brahms! Imagine treating paralysis without Mozart! Unthinkable.

I admit that Stephen Foster was an estimable composer in his own right. As a matter of fact, I had frequently found his melodies helpful in cases of pneumonia, but I had seldom prescribed them for anything else, and had indeed found some patients allergic to them. Stephen Foster for rheumatism—bah! I could have done better with Irving Berlin.

I was particularly sorry for Smathers. Foster made him weep, and that was just what would hurt him. It seemed the hospital might have to go back to old homeopathic methods.

THE day the tragedy broke I stopped sadly beside the bedside of Smathers.

"I suppose you've heard," I said—for rumors spread swiftly via hospital grapevine. "I guess you know you may have to wait some time for that Pastoral."

Smathers smiled up at me, trying to make the best of it.

"I'm glad you're not discouraged," I went on. "Perhaps it isn't as bad as it looks now. I've an appointment this afternoon with Dr. Barr,

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president of the Music Trust. I'll try to talk some sense into him."

At that, my patient's face brightened, and he laughed aloud. He crooked his finger and I bent low, and he whispered something in my ear. My pulse pounded when I heard what he had to say. Good old Smathers! He'd been around hospitals so long, and so many incorrect treatments had been used in his case, that he had picked up some medical knowledge. I decided to try the experiment he proposed. It might work—it *had* to work!

That afternoon Dr. Barr came to see me. He was a pompous-individual with fat jowls and a rippling cascade of chins which made a wisp of mustache lost on a great expanse of face. His clothes bespoke prosperity, his bulging abdomen bespoke self-indulgence, and his heavy brows were designed to make one quail. However, I pulled myself together, determined to be polite and politic at all costs. I grinned inwardly at Smathers' brilliant suggestion that might work a miracle.

"Good day, Dr. Barr," I said formally. "The Futura Hospital is honored by your presence."

He merely grunted in acknowledgment.

"I hope," I continued, "that we may come to an understanding."

Another grunt.

"I'm glad you understand," I added. "You know, of course, how important it is for us to have the music we require. It's really a matter of life and death."

"I understand nothing," he fairly snarled, "except that you can't meet our rates. Very well, then. Use the music you have available and cease asking for our recordings!"

"But you are a doctor," I pleaded. "You know how vital it is for us to have *all* music at our disposal. There are patients who will respond to the third movement of a symphony while the fourth, of the same symphony, might prove fatal. You can't play with people's lives that way."

"Then meet our rental rates."

There was no use. He was adamant. Solid and unyielding he rose to his full height and stood before me, protuberant abdomen jutting ahead of him like a buffer against all opposition.

It was time to use Smathers' idea. I pressed the buzzer.

My assistants were all ready to cooperate instantly. The patients had all been forewarned and fortified for the ordeal they would have to face. I couldn't offer earphones to Dr. Barr—that would have been too obvious—so they all had to suffer.

Echoing through the halls of the hospital, penetrating clearly into my private office, came the words and music of that really sweet song:

I dream of Jeannie with the light
brown hair,
Borne like a vapor on the
Summer air. . . .

INCREASING in volume as it progressed, the song went on to the end. Dr. Barr was unmoved.

"I see you are already using substitutes," he said calmly. "Well, if they'll serve. . . ."

He made as if to go, but I pressed another buzzer, and an orderly promptly entered with tea and cake.

"I hope," I said in an exaggeration of formal politeness, "that you will accept our humble hospitality."

"Why . . . yes, of course," responded the surprised Trust head.

I knew Dr. Barr couldn't resist refreshments. That was part of Smathers' ingenious plan. The human hog before me began gulping tea and cake at a furious rate. I kept silent, presently ringing the first buzzer again. Once more:

I dream of Jeannie with the light
brown hair. . . .

Dr. Barr paid hardly any attention. A man of iron. I began to have fears about this experiment.

I talked rapidly now, using every persuasive device to hold him. I rang for another orderly who brought more refreshments, and after the proper interval I rang again, and once more:

I dream of Jeannie with the light
brown hair. . . .

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This time, I noted, his fingers began to twitch.

"Is that the only record you have?" he rasped impatiently.

I was exultant.

"Well," I hedged, "it's one of the very few early Rithem recordings we're still able to use, and it does my patient Smathers so much good!"

I smiled in a manner most beneficent. Dr. Barr found the power to smile in return, but I noticed that his fingers were still twitching, and now he was performing weird gyrations with his forehead, nose and thick lips. Now was the time to strike. I pressed the buzzer three times:

I dream of Jeannie with the light brown hair. . . .

Louder than before the music reverberated, this time without pause. The song was repeated over and over with maddening monotony.

A piece of cake half-raised to his mouth, Dr. Barr sat as if spellbound. His face turned crimson, then white, then crimson again.

At the fifth repetition of the song, the accumulated dosage had its expected effect. Dr. Barr collapsed on the floor of my office.

My orderlies carried him to a private room in the hospital.

"Jeannie With the Light Brown Hair," and obesity just didn't get on together, as Smathers and I had known.

After checking up on the condition of my more serious patients, I retreated to my own chamber and there in solitude softly whistled to myself the "Poet and Peasant Overture" to quiet my own upset nerves.

DR. BARR was extremely grateful for the excellent care he received at the hospital. All the doctors, nurses and orderlies were instructed to handle him with kid gloves. He received constant careful attention and the very best of food. I appointed myself as the doctor in charge of his case and used all the tricks I knew to make him as comfortable and satisfied as possible. But I saw to it that he remained too weak to be moved. And for a time I gave no musical treatment whatsoever.

Then one day I examined him very solemnly, made my diagnosis, and prescribed a musical course of treatment for him.

It was "Jeannie With the Light Brown Hair."

"Are you certain?" he whispered weakly when he heard my verdict.

I noted with satisfaction that he paled at the very thought. I felt some qualms of conscience, but I was determined to carry on. He'd made a hog of himself all his life, and now it was his turn to be my guinea pig.

How can I tell the story of the next few days? Luckily it was now possible to give Dr. Barr the earphones, thus confining the treatment to him and protecting the other patients. They were all getting lower and lower, but held on through sheer hope.

Over and over the Foster melody was played, again and again Dr. Barr had fainting spells and other manifestations of weakness, but I had instilled such great confidence that he did not complain.

The breaking point came finally, however, as I knew it must. One morning I entered the hospital to find Dr. Barr almost a raving maniac!

"Give me Beethoven!" he cried, frothing at the mouth. "Give me Brahms! Give me Mozart! For heaven's sake, no more of that Jeannie song! I'm a doctor myself, I tell you! Give me Sibelius! Just a little—just one note!"

It was really pathetic.

"But, Dr. Barr," I expostulated, "you and your Trust have made those treatments impossible."

"I don't care!" he shouted. "I don't care! I want the Moonlight Sonata! I must have the Moonlight—"

His face grew redder every moment. I really feared for his life. But I was prepared for just such an emergency.

"There is a way," I said smoothly, "by which you can have all the musical medication you need." And I drew forth a document I had prepared in advance.

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It granted my own hospital, and all other hospitals, the right to use all Rithem therapeutic recordings at the old rate for another ten years.

Dr. Barr grasped the document and read it. There were tears of joy in his eyes when he signed, a defeated man.

Immediately I telephoned the nearest source of supply and in a shorter time than it takes to tell, an aero-car arrived with a huge quantity of long-wanted recordings.

There then echoed through the halls of Futura the beautiful and inspiring strains of the Moonlight Sonata. As the lovely, fragile music, so helpful in almost any disease I can name, wafted through the air, my patients were electrified with new life and joy. The dreamy, divine melody of Beethoven took hold of their racked bodies and spread its beneficence among them, and their limbs rose out of lethargy, and their eyes lit up.

Dr. Barr sat up on his haunches, completely cured. He made a grab for the contract, but I was too fast for him.

Out of the corner of my eye, I saw dear little Eleanor Day. Her face was as if transfigured. The greatest crisis the medical profession had faced in a century was over.

NOW, when the Dynamic Sound Ray Box has outgrown its infancy, and so many excellent treatments are freely available, I must append a word anent that hero, Tom Smathers, whose sacrifice is written in shining letters. His glorious heroism saved many lives—but the poor fellow never lived to see the success of his plan.

Alas, the constant repetition of "Jeannie With the Light Brown Hair" that day Dr. Barr called upon me had proved too much for his condition. Though we tried our utmost to brighten him up when help arrived, we could not undo the damage. He suffered a fatal relapse and died, a martyr to medical science.

HEADLINERS IN THE NEXT ISSUE

WONDERFUL is as wonderful does, to paraphrase an old adage. Have you ever had something happen to you when it seems that time stands still and a whole lifetime of events or suspense crowds into that instant? That is precisely what happens to the hero of Henry Kuttner's novel, THE INFINITE MOMENT, which heads next issue's list of science fiction. This is something truly different! You are going to enjoy this rapid-paced, science-packed adventure yarn as much as any thing you have read in months.

* * * *

ON TAP to follow this splendid science fantasy is a hilarious long novelet by that master of sports story, Don Tracy. SUPER-ATHLETE is a deliriously funny science-sports novelet which will have you in stitches before you have read three pages!

* * * *

NEXT comes the third and concluding story in Ray Cummings' Robot Saga. You will find REGENERATION to be the finest and most stirring tale of the trilogy. In this story the grandson of the original hero leads his fellowmen back to a new world.

* * * *

DIMENSIONS get all twisted up in the next story we have definitely scheduled for you. This fine short story is another prize winner in our AMATEUR STORY CONTEST, the results of which were announced last issue and one winner of which appears in this issue. TWISTED DIMENSIONS, by Daniel A. Alexander, will give you contestants a mark to shoot at.

* * * *

EMBELLISHING the cover will be a painting by E. K. Bergey, illustrating a vivid story—THE PLASTIC GENIE, by Arthur T. Harris. A striking cover—and a sharply unique story!

* * * *

REBOUNDING out the issue will be other stories, the various departments—and Sergeant Saturn riding herd on rebellious readers. Don't shoot until you can see the rocket rings around their eyes!

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After a lurid red flash, Nordiff watched the body swell

THIS IS HELL

By OSCAR J. FRIEND

Author of "The Kid from Mars," "The Watery World," etc.

In an Ebon Tomb Sunk Deep in Martian Wastes, a Scientist Mad for Fame Unseals the Door of Hades!

DAWN on the Martian desert. Deep in the heart of the Guba-Guba Plains, so remote from the fretwork of the great canal system that every drop of water had to be hauled in special tank trucks, a great motion picture company from Earth was on location.

Erected by blood and sweat and tears, the movie location city of Atlantis stood like a squat and compact army cantonment there on the desolate red sand plains. Surrounded by motor equipment and littered with scientific and electrical paraphernalia, the temporary city derived its name, Atlantis, from the glittering white structure at the town's western edge.

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From the city itself this edifice stood out as a beautiful white temple of graceful lines, with several towers, a broad flight of majestic steps and a white cement plaza. Designed in the Greco-Roman period, the structure represented an architectural conception of the temple erected to the high priest of ancient Atlantis. Actually the temple was only a shell of structural steel faced with smooth white cement.

Now, after months of toil and preparation, the film epic's final climactic scene—the destruction of the temple by an earthquake—was to be made today. Everything and everybody was in readiness. Special equipment for the artificial bolts of lightning had just been completed by Sam Dozment, chief technician on location. The huge movie set had been carefully mined with the new silent explosive known as trontol-235. Only one factor was holding up production.

Arthur Arnold, "the Great Profile" of Tru-Depths Pictures, had disappeared.

True, Dr. Winston Nordiff and Professor James Gilbraith were also missing. But these two scientists were merely leaders of the small archeological unit which had accompanied the picture expedition to the Guba-Guba-Plains.

Only at night did the archeological outfit mingle with the personnel of the picture company. And last night Dr. Nordiff had come in terribly excited over finding what he claimed was a prehistoric burial crypt of the vanished Wart-men. According to legend, Wart-men had once inhabited this region when Mars was young.

The other eight members of Nordiff's crew had remained in Atlantis today to witness the earthquake spectacle. They didn't know the location of Nordiff's burial crypt.

Arthur Arnold, "the Great Profile," himself an amateur research worker, had become interested in Dr. Nordiff's labors. Even now, Arnold might conceivably be lost somewhere in the red desert's trackless immensity. Or he might not.

But this much was certain. Tru-Depth's earthquake sequence was ready for the cameras—and the stellar performer had walked out!

DAWN on the Martian desert. Low on the horizon in the blue-black sky the sun, shrunken here to two-thirds its familiar self, slanted burning rays through a rarefied, cloudless atmosphere.

Some twenty miles west of the movie town, a trio of Earthmen in warm woolen, loose-fitting suits and pith sun helmets were busily at work with pick and shovel, removing caked sand from what was obviously the sealed entrance to a black mound of lava-fused rock.

Off to one side stood a sturdy truck, equipped with caterpillar treads for desert travel. Littering the ground was a wealth of cases and crates. Had it not been for the illimitable wastes of dead red sand, the queer cloudless sky and the shrunken sun, the scene could have represented an archeological excavation in the Sahara Desert.

Dr. Winston Nordiff, Professor James Gilbraith and Tru-Depth's star, Arthur Arnold, were cracking the ancient Martian crypt.

"Having a sort of preview, as it were." Arnold joked a bit nervously as he straightened and mopped his brow. "I hope we don't meet with any difficulties. I have to get back on location before noon. We're shooting the earthquake sequence today, you know."

Bronzed, muscular and taciturn, Professor Gilbraith picked up sledge and star drill to attack the flintlike compound which sealed the inverted U-shaped portal of the secret crypt.

Gilbraith carried on his work like an extension of Nordiff's hands.

Dr. Nordiff, on the other hand was quite voluble. His black eyes glittered with feverish excitement, and his black beard waggled like a billy-goat's as he answered Arnold.

"The opening of this tomb is of far greater importance than your make-believe motion picture," he snorted. "The idea of filming the sinking of Atlantis on a dry Martian desert! At-

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lantis sank beneath the sea."

"Everybody knows that," Arnold agreed. "In the meantime, look at the publicity we're getting. And if it hadn't been for this film expedition, you wouldn't be here right now in the Guba-Guba Plains," he added pointedly.

Nordiff flushed. "I'd have found another way of getting here," he snapped. "Even if I had been forced to sell my rights in my cosmic generator."

"What's that?" Arnold asked curiously. "What's it for? What does it do?"

"I haven't fully explored its possibilities as yet." Nordiff's eyes glowed in speculation. "At low power it seems to rejuvenate living tissue—makes aging things grow younger by renewing the cellular structure's life cycle. I haven't had time to follow this line of research out to its conclusion, but in my experiments I have doubled the life-span of plants and small rodents.

"At double power—I don't know. I tried that on a skitar before joining this Tru-Depth expedition. The vicious beast turned pink and actually expanded to twice its normal size before it died.

"This generator may be a new weapon of deadly warfare. At full power—who knows? With the proper catalyst I might even bring dead things back to life."

Arnold's eyes widened.

"What is the proper catalyst?" he asked.

"I haven't reached that point yet."

"Well," Arnold demanded, puzzled, "how do you intend to use the thing here?"

Nordiff stroked his beard, shrugged. "It depends on what we find. I have a theory that the ancient Wartmen were vegetable creatures. If that is so—if they had chlorophyll blood instead of the ferrous molecule which makes the red blood of mammals, and if I could find a specimen to work with—

"Well, I've had more success with plant organisms than with anything else."

"You mean," Arnold said incredulously, "that you intend experimenting with this artificial cosmic ray machine of yours, here in this ancient crypt, without knowing the full extent of its powers?"

"Certainly! Why not?" Nordiff was annoyed. "The cosmic generator has only a germicidal effect on dead things. But we are not likely to encounter any living bacteria in this age-old tomb."

ARNOLD gazed across the red wastes, up at the queerly blue-black sky, and shook his head worriedly as he glanced at his watch. He knew he should be getting into costume and make-up right now. But he had just as much chance of disrupting the excavation at this moment, as he had of making it back to Atlantis on foot.

"Think of it, Arnold!" Nordiff resumed. "If my deductions are correct, we shall find in this crypt relics of an alien civilization which vanished a hundred thousand years before Atlantis existed! Skilled as Gilbraith is in ancient planetary languages, even he can make nothing of the characters engraved on the face of that door."

Arnold glanced from the sparkling black eyes of the bearded Nordiff to the queer tracings on the tomb door. Cut intaglio style, worn and eroded by time, weather and sand, they looked to the film star like a cross-section of a termite's nest, rather than the work of intelligent beings.

Dr. Nordiff warmed to his subject as he began assembling a strange-looking instrument on a wheeled stand—a thing of lenses, radio tubes, batteries and dials.

"Earlier exploration of Martian ruins has indicated the one-time existence of a race of humanoid creatures of astonishing intelligence. Unfortunately, no fossilized remains have yet been found. But the piecing together of scraps of evidence points to a race of green-skinned, wart-covered individuals, with fanglike incisors and taloned nails.

"They were completely hairless and

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grew to a height of possibly eight or ten feet. From my own painstaking research and examination of Martian folklore, I am positive the ancient Wart-men of these Guba-Guba Plains were evolved from amphibian stock—similar, that is, to our Earth bullfrogs.

"The gradual desiccation of Mars doomed them to extinction. Other forms of life managed to survive. This is one of my reasons for thinking the Wart-men may have been chlorophyll creatures. But I am not yet certain of that.

"However, by the use of this cosmic generator—if we find any remains—I expect to establish the truth or falsity of this premise, along with other interesting data."

Arnold's handsome face betrayed anxiety.

"Don't you think, Dr. Nordiff," he suggested, "that it's dangerous to go messing around with those artificial cosmic rays, before you have thoroughly tested them? In our various talks about this machine, you have admitted to me that you don't fully understand the extent of its effects."

Nordiff paused in his work and glanced coldly at the actor.

"Are you questioning my intelligence and ability, Arnold?" he demanded.

"Not at all. But remember that skitar on which you tried the ray—how it expanded to grotesque proportions before it died? And I have some knowledge of the power of natural cosmic rays myself.

"Dr. Millikan, back in the twentieth century, was amazed at the effects of cosmic rays on the very life genes. We still don't know a lot about these mysterious radiations which permeate all space. As for your artificial rays, even you—"

"Don't be ridiculous, Arnold!" Nordiff snorted. "Go see if you can help Gilbraith with that slab of rock. If you want to get back to your picture work by noon, I might add."

Arnold shrugged and went over to assist the taciturn professor and linguist. As curious and excited as boys, the three of them had left the movie encampment four hours before sunrise that morning, driven to the tomb site for an initial peek into this relic of a mysterious past.

PRESENTLY the compound which sealed the secret portal was chipped off. The inverted U-shaped door proving immovable, a charge of the new, silent trontol-235 explosive, which was to be used in the destruction of the Atlantis film set, was set off.

With only the crashing, grinding rumble of the disintegrating rock slab itself, the portal quivered in its setting, tottered and fell outward with a resounding roar.

Dust had not had time to settle before the three men were crowding in through the gaping black aperture, powerful hand torches lighting the way before them. They picked their path over the rubble, passed along a ten-foot corridor through walls twenty feet thick, and stood on the threshold of a weird and timeless sepulcher.

"Like entering the lower depths of Hell," Arnold murmured.

Neither Nordiff nor Gilbraith answered. The two archeologists were flashing their torches rapidly about the interior of the dome, exclaiming in sharp excitement at the alien murals on the walls, the queer stone furnishings, the niched and encased trappings of a dead civilization. Then they spotted the sarcophagus.

Nordiff was like a wild man as he saw the ten-foot crypt on a low dais in the exact center of the circular chamber.

"A burial vault! Just as I suspected," Nordiff cried. "We've found the mortal remains of a Wart-man, as sure as we stand here on Mars. I shall be famous! Wouldn't the Egyptologists give their very souls to be in my shoes at this moment!

"Gilbraith, see what you can make of the hieroglyphics on the sarcophagus; they're in a perfect state of preservation. Arnold, come help me bring in my cosmic generator."

Gilbraith rapped experimentally on the black burial case with his star drill. It gave forth a dull, ringing sound.

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"Not stone," he said. "A strange metal of some sort. Possibly Paulson can identify it tomorrow. I can't decipher the writings without considerable study. The lid of this thing seems to be cemented down with the same sort of compound used at the entrance."

"Get to work and open it," Nordiff directed. "I've got to see what's inside. You can examine the casing and any other items at your leisure. When we get back to Earth with these treasures, we will classify every object and read the riddle of a vanished culture.

"Come on, Arnold. What on Mars is the matter with you?"

THE actor shuddered and drew a deep breath.

"I don't know," he confessed. "But I feel as if—as if we stood somehow on the brink of disaster. Hadn't we better wait until—"

"You claim to be a scientist of reputable amateur standing, Arnold," said Nordiff acidly. "You wanted to be one of the first to examine this tomb.

"That's why I brought you instead of Paulson or Landeau. Are you going to help me with my generator, or are you not?"

"I'll help," Arnold sighed. "But just what you hope to accomplish by turning your artificial cosmic rays on the skeleton of whatever may be in that coffin—"

He shrugged nervously.

Professor Gilbraith by now had placed his electric torch where it would afford the best light. He was drilling away methodically at the seam which sealed the sarcophagus lid.

When Arnold and the energetic Nordiff returned with the ray machine, Gilbraith was chiseling away the last bits of sealing compound from the huge casket.

By the time Nordiff had strung a light from the generator located on the caterpillar truck and was carefully adjusting his cosmic ray apparatus, Gilbraith was ready to remove the lid of the sarcophagus.

At a word from Nordiff, the professor placed a wrecking bar under the lid, bore down mightily on it. To the amazement of all three men, the lid swung up easily on concealed hinged arms.

For once excited, Gilbraith lost his balance and fell against the black sarcophagus, dropping the wrecking bar and clutching at the rim to keep from falling. A small cloud of minute dust billowed up from inside the casket, drawn by the suction of the rising lid. For an instant Professor Gilbraith's head and shoulders were engulfed in the fine, scintillating mist.

He choked, coughed, staggered back—and the contents of the sarcophagus were revealed. Instead of a handful of moldering bones and dust, here was a perfectly preserved nine-foot specimen of the vanished race of Wart-men!

"A mummy!" shouted Dr. Nordiff, his eyes glittering in excitement. "The Wart-men mastered the art of embalming! I never hoped for this."

Arthur Arnold stared. The terrible feeling of depression and peril he had felt, instead of lessening, was now intensified. The body of the nine-foot Wart-man, if anything, heightened the devilish atmosphere.

Save for the blackish skin and the grotesque warts on the ears and naked shoulders, the corpse of the Wart-man was a remarkably faithful replica of Earthmen's popular conception of the Devil.

Given horns, a tail and a vivid red hue, the eerie occupant of the casket might be a personification of Satan—even to the taloned fingers and incisor fangs.

But the form was markedly human. The features, aside from the disfigurement of long incisors and pointed ears, were regular and not at all repulsive. Dr. Nordiff rushed forward to make a closer examination. He reached in and tentatively felt the torso of the dead Wart-man.

He started slightly, pressed harder with his fingers, making not the slightest indentation. He tapped the body, clenched his fist and rapped the chest. The result was a heavy, dull sound.

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"Stone!" the scientist exclaimed. "This isn't a genuine mummy," he went on in angry disappointment. "It's only a statue—a fake! Unless a special ossification process represented their embalming technique. Maybe the arid condition of Mars had a sort of petrifying effect. We'll soon know if this thing was once animate."

Nordiff leaped back to his cosmic ray machine, focused its battery of lenses upon the ghastly form in the sarcophagus, switched on a connection. A barrage of lurid red rays shot forth to bathe the stone corpse in the casket—*full power!*

In the background Professor Gilbraith had ceased choking on the casket dust and was breathing stertorously. He sounded like a spent runner panting and gurgling for air. Suddenly he straightened up and tore at the neck of his garment with frenzied fingers, baring his heaving chest.

"Nordiff!" he articulated in a hoarse whisper. "Not—stone. Not carboniferous—even. Silicon—man. You—check. Danger—plague—worse than silicosis. I—my lungs—turning—to solid stone. I—feel it. I—"

His voice ceased as he clawed at his throat. Before the other two could reach him, he toppled and fell to the obsidian floor with a solid thud. By the time Arnold knelt beside him Gilbraith was dead.

THE actor recoiled as he felt the unyielding chest beneath his fingers.

"My God, Dr. Nordiff! His thorax has turned to stone!"

Quickly the archeologist knelt beside his fallen colleague. He ran swift hands over the still warm body, which had now become as hard and adamant as flint.

"Yes," Nordiff said crisply. "He was right about lobar ossification. He received the full effect of that cloud of dust, remember. But the idea of a silicon life cycle instead of carbon is ridiculous! At least, in the solar system."

"Why argue about that point?" cried Arnold. "The deadly peril of whatever plague or disease this embodies would threaten mankind get out of here and close th forever. Hurry!"

"Are you crazy, Arnold?" snapped. "This discovery w me famous! I will be the nowned man in the solar There's no plague danger. W ing to take all these things Earth with us. Why, I woul

"You're going to get out o and pray that you haven't al been contaminated with whatever rible disease killed Gilbraith. Wh it probably killed that poor devil in the sarcophagus, also. And shut off that accursed cosmic generator of yours!"

Leaping to his feet, Arnold approached the machine to disconnect the master switch. Swift as a flash, Dr. Nordiff lunged and grabbed him by the arm.

"No, you don't!" he snarled. "There's no danger to us, you fool, or we'd have been dead by now, too. The rays will render anything in the sarcophagus harmless. If I only knew what to use as a catalyst, I might even activate the cells and tissues of this perfect Wart-man specimen and—"

"Let me go, you madman!" cried Arnold, attempting to jerk free. "I'm going to turn off that machine!"

"Listen to me, Arnold!" pleaded Nordiff desperately, clinging to the aroused actor. "Then I'll shut off the generator. I'm just as sorry about Gilbraith as you are. But he's gone now, and we can't help it. We'll find out later just what killed him—when we get all these objects safely to Earth, where we can study them.

"There's no use saying anything about this back at Atlantis; they wouldn't understand. We'll just explain that Gilbraith met with an accidental death, and—"

"You mean that you would ignore the warning Gilbraith tried to give you?" Arnold was aghast. "You would cover up this horrible danger, expose the entire picture company to the same sort of death, simply to get the stuff from this crypt stowed aboard our chartered space freighter?

"You mean," Arnold demanded,

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[redacted]t taking the slightest precau-
[redacted]u would incur the risk of car-
[redacted]ossible plague back to Earth?
[redacted]t be insane! I'm going to re-
[redacted] at once to Sam Dozment!"
[redacted] yelled Nordiff. "You shall
[redacted]ive me of my fame because
[redacted]absurd ignorance. The con-
[redacted] this crypt are going back to
[redacted]n the freighter, and—"

[redacted]roke off with a startled grunt
[redacted]rnold swung his fist. Ducking
[redacted] blow, Nordiff released the actor
[redacted]d came entirely erect from the floor,
[redacted]is free hand clutching the wrecking
[redacted]ar the dying Gilbraith had dropped.
[redacted]n a frenzy of despair, he swung it
[redacted]nce.

The heavy bar struck the actor across the chest and knocked him backward. Staggering and waving his arms to regain his balance, Arnold reeled back full into the path of the barrage of cosmic beams.

His body quivered as though he had received a terrific jolt of electricity. But he staggered on until his heel tripped against the low dais. He plummeted backward—to sprawl full on top of the monstrosity in the sarcophagus!

ARNOLD never spoke again. Before Nordiff's horrified eyes, his flesh a lurid red under the cosmic generator rays, the actor's body began swelling rapidly, distending in all directions like an expanding toy balloon. Then his entire form became translucent, tenuous—immaterial.

Like water soaking into an unglazed clay brick, Arnold simply drained into the form of the petrified Wart-man! Like smoke sucked down into a ventilator shaft, the still-swelling wraithlike body of Arthur Arnold disappeared!

The actor showed no signs of rejuvenation, as the plants and rodents had done under the low power of the artificial cosmic rays. He didn't distend to twice his normal volume and then die, as the skitar had done under the double-strength rays. He simply turned into billowing fog, then vanished downward into that incredible stone mummy of a Wart-man.

With even more startling abruptness the long-dead body of this ancient creature became imbued with a horrible movement of its own. The Wart-man began writhing and swelling, distending, overflowing the sarcophagus in a verisimilitude of life. Dr. Nordiff had found, not a catalyst, but a vital spark and force whose potentialities were unknown and unguessable.

Uttering a wild cry, the panic-stricken scientist dropped the wrecking bar and fled from the crypt. Panting and sobbing, he flung himself into the cab of the caterpillar truck and started the motor. Crashing the gears into mesh, he drove madly across the red sands of the Guba-Guba Plains toward Atlantis.

Behind him in that black crypt, still bathed in the crimson glare of the battery-operated cosmic generator, the body of the Wart-man continued to move and expand with sentient life.

* * *

Startlingly vivid against the deep blue background of the Martian sky, the white temple rose in graceful lines above the harsh red sands of the Guba-Guba Plains. Gleaming beautifully in the sharp sunlight of full day, the temple of the high priesthood of ancient Atlantis looked majestically down on a throng of people, gaily attired in the varied and colorful garb of the Roman Empire.

Centurions, legionaries, fur-clad barbarians, senators, archers, vestal virgins—all that the script writers for Tru-Depth Pictures could imagine of that ancient sunken world, so akin to Rome itself, brought Atlantis back to life before the purring three-dimensional cameras.

Behind the cameras, pausing occasionally to glance at one of the many electrical units, Chief Technician Sam Dozment strode restlessly back and forth.

After a final conference, it had been decided to proceed with the filming of the spectacle without Arthur Arnold. His stand-in and double would do for the long shots of the earth-

(Continued on page 125)

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THE STORY BEHIND THE STORY

FOR more than a year now Eando Binder has been teasing us all with those mysterious Gordon A. Giles pyramids his spatial explorers have been finding on the various planets like abandoned telephone booths or worn-out trolley cars. It seems that he has cornered himself at last in VIA JUPITER. He adjusts his scientific pince-nez and tells us the pyramidal answer—only to spring a greater mystery. But here, let Author Binder tell it himself.

VIA JUPITER came to be written, as with all the Via stories, when a sequel seemed in line. It's a longer tale this time, but was originally written as three companion stories of short length, and then combined into one at the suggestion of the editors. This was mainly to nail the "mystery" of the Pyramids once and for all, without dangling it unnecessarily for three issues.

Yes, at last the mystery of the Pyramids is explained. As a guess, these are some of the involuntary remarks from you long-suffering readers—IT'S ABOUT TIME, BUD! Or —SO THAT'S ALL IT AMOUNTED TO? Or perhaps—SO WHAT, WHO CARES? At any rate, here it is, and if the spoil hasn't been worth the chase, don't spare me in your letters!

Reviewing the whole Via series, and its running thread of the Pyramids, let me confess that it was accidental, not planned. Pyramids were first found on Mars, simply as a story twist, and then were incorporated into the Venus series at editorial suggestion. The Mercury series quite naturally carried them on, because by then a whole schematic "history" of past ages of the Solar System had grown from the acorn. I've had a good deal of pleasure in writing the whole saga, if I may call it that. My only hope is that reader interest has been in proportion.

As to the actual genesis of VIA JUPITER, it was obvious that after exploring the inner planets, the space pioneers would take in Jupiter, nearest of the major bodies. It was obvious, too, to use the Red Spot in the story. In fact, the word "obvious" applies to everything in the Via series. The whole plan was to take obvious things—things written about time and time again, and keep away from the fantastic. The idea of Martian civilization being "dead" is not new. The background of a very humid, very hot Venus is not new. The "twilight" zone of Mercury is old stuff. And the great gravity of Jupiter and its Red Spot are well-hashed subjects.

That gave a basis of REALISM. Or at least the most commonly accepted notion of what things were out in space, in the lexicon of science fiction. From there on it was HUMAN REACTION that counted—what Atwell, Gilliway, Parletti, and the others thought and speculated and wondered over, as you and I might in their place.

So, coming to VIA JUPITER again, two obvious factors were the framework around which the drama was written—Jupiter's gravity and the Red Spot. And the Pyramids. And again, wasn't it "obvious" to take the old, old idea of the Asteroids once composing a separate planet, and make that the explanation of the Pyramids?

BUT—if anyone's interested—the solution of this mystery has only led to another. And that is, what about the Martians themselves? They left their pyramidal signposts all over the system, but what happened to THEM? That, in a nutshell, is the question I'd like to answer in a future Via story—if the editors so will it. And more importantly, if you of the great unseen audience care a whit one way or another. I trust so!—Eando Binder.

LUXURY LINER

After a balloonful of laughing gas from Kelvin Kent, the Nelson Bond story of an excursion into space in the future makes a pleasant contrast. We think it balances this issue exceptionally well. Anyway, here's Nelson Bond's account of what sent him a-voyaging in the LUXURY LINER you found in this issue.

About a year and a half ago THRILLING WONDER printed its first chapter of that one, loosely integrated tale which is my own private History of the Future. At the time this story—PRISONER'S BASE—appeared, I set forth the simple credo which has governed my every essay into the field of science-fiction: i.e., that such narratives should be not only action-fraught and stimulating to the imagination, but **logical** as well.

In adherence to this principle, the background for LUXURY LINER is a logical future development of that which is a part of our 20th Century everyday life: that catering to every human's desire to see new sights, experience new thrills, which forms the Tourist Trade. Today we have our two-day, two-week and even two-year excursions; in the World of Tomorrow it is altogether likely that tremendous space liners will bear to the new found outposts of Man, deckloads of gawking, camera-snapping, "It's-all-right-but-it-ain't-as-nice as-home" tourists.

And—human nature being the one constant factor in the ever-changing equation of Man's progress—it is just as likely that there will arise amongst these passengers such problems of the body and mind and heart as beset Lt. Kirk McCrae in this story.

Voices other than my own must explain, judge, and justify the scientific accuracy of statements made, theories presented, in LUXURY LINER. My apologia for all of these stories may be summed up in the following statement:

These things have not really happened. They may not ever happen. But in the days which are to come—they could happen.—Nelson S. Bond.

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EVERY once in a while the editor (chief pilot, to you space swabs) in handing the astrogation chart to the old Sarge to lay the course by, hands even the old space dog a surprise. He's done it again in this issue's main cargo, VIA JUPITER, by Eando Binder. Never a dull moment in this space ship! You never know when a surprise package of some nature is going to be opened.

Yes, the Via series has been written by that crafty craftsman, Eando Binder. It was a gag—*Gordon A. Giles*! Get it? And with this thrilling climax to the series concerning the mystery of the interplanetary pyramids, we are letting you in on the lesser mystery about who-dun-it. Sort of letting the bag out of the cat after the goldfish ate the canary, if you know what I mean. But read what Author Binder has to say about it in The Story Behind The Story department.

We prepared you for the worst last issue with the announcement of the author's real name in the ads and blurbs. Maybe that's the reason this kiwi says—

TWS IMPROVING

By Bill Stoy

Wonder of wonders, TWS is once more becoming a really good mag! (Boy, Sarge, when you can get that phrase out of a guy like me, who thinks "not bad" means wonderful, excellent, superb, you're doing pretty good!). I was afraid that the Oct. ish was only a flash in the pan, but no, the Dec. number was, if anything, an improvement. I kinda think this comparative success is due to the relatively recent policy of short novels, together with a strange, almost miraculous improvement in the short story work and illustrations. Incidentally, those short novels certainly fill the bill—not long enough to be boring, and yet not short enough to hamper the development of the plot.

"Time Column" (and is it timely—in more ways than one!) ties with "Island in the Sky" as WONDER'S best story of the year. With his usual thoroughness—even for a Navy man (you know how Navy men are, Sarge), Jameson has written one of his best stories to date. Let's have more from his tripping typewriter.

Morrison has turned out a good yarn in "Christmas on Mars," and it takes second place on the list of best stories (of this ish). Hot on his heels comes Cummings and "Decadence" in third—surprisingly good for R.C. who's been slipping lately. He invariably uses three plots: robots-overthrow-civilization, into-the-atom, and boy-meets-girl-with-wings. It's getting monotonous!

The artwork has remained at the level of the last issue. While the cover is a great deal better, the interior illustrations have slipped. That cover is the best thing I've seen for a long, long time on TWS—I'm still trying to get over the shock. As for the interior, I'd like to see Paul, Finlay and Wesso (he did a nice job on TC), without Marchioni or Saaty.

I've mentioned some suggestions in my last letter, but here are several that I think could bear repeating: In a stentorian, threatening voice I roar, "Change that title to Wonder!" and then add timidly, "Please?" That excuse you gave to one reader doesn't seem to me to be a good one. Also, how about reviving interest in the SFL and devoting Looking Forward exclusively to it? And how about making that science article a permanent feature? Huh, Sarge?

Wotsis about Binder penning next issue's lead novel, "Via Jupiter." Is he subbing for Giles or is he really. . . .—140-92 Burden Crescent, Jamaica, N. Y.

Glad to have your report that you liked the issue, Pee-lot Stoy. Maybe there is some balm in Gilead, after all. (Molten bismuth for the Mercurian elementark—for you space hounds who must have your interplanetary similes.)

Yep, we dragged our old favorite Eando Binder out from behind those GAG whiskers, kiwi. Now, you space pirates ray him down for clearing up one mystery—and propounding a greater enigma—the matter of the vanished Martians. If you want Binder to delve into that business, write in and say so, and maybe the old Sarge will make up a two-man expedition to pilot Binder on his trip of exploration. Who knows, we may dig up some more dope on the Wartmen of the Guba-Guba Plains on Mars.

Here's a SFL flash from South Africa. Go ahead, Africa.

In this department we shall publish your opinions every month. After all, this is YOUR magazine, and it is edited for YOU. If a story in THRILLING WONDER STORIES fails to click with you, it is up to you to let us know about it. We welcome your letters whether they are complimentary or critical—or contain good old-fashioned brickbats! Write regularly! As many of your letters as possible will be printed herein. We cannot undertake to enter into private correspondence.

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SFL NEWCOMER

By M. Berkowitz

I wish to apply for membership in the SCIENCE FICTION LEAGUE. I am a regular reader of TWS, although I get them quite a few months after publication. That's why I send you an enrollment form dated months back.

I'm sorry I can't stamp the enclosed self-addressed envelope, but I have no unused U. S. stamps or coupons. I would appreciate it very much if you could stamp the letter in this case, and I will pay the postage as soon as the war is over. Or maybe you could somehow send it collect?

Thank you, anyhow.—124 Park Rd., Bulawayo, S. Rhodesia.

Okay, Kiwi Berkowitz, you get your membership. Never mind the postage, but let's hope the war is ended pretty quickly. We got scientific chores for the world to do.

And here's a sports fan's communique.

LOYAL TO THE DEATH

By Norman Green

Spread in front of me is your latest issue of TWS. What an issue! A real improvement over the last one. Bengey's cover scene depicting "Without Rocket From Earth" was swell.

"Time Column" by Malcolm Jameson was much better than I expected. Jack Winter sure got himself into plenty of hot water. Many times cold sweat came pouring down my forehead when Winter was about to die some way or other. That's one novel that won't be forgotten in a long time.

"Without Rocket From Earth" by H. L. Gold comes next. He did a neat piece of writing on that yarn.

"Decadence" by Ray Cummings was better than his usual stuff. "Christmas on Mars" and "Snapdraggon" are tie for last. (That isn't anything to be proud of.)

Paul would help a lot.

A loyal Dodger Fan.—1462 East 23rd Street, Brooklyn, N. Y.

Well, what do you know? These Dodger fans die hard, don't they? In fact, they don't die. Yankees, look out for next year! Kiwi Green, I'll bet you would enjoy a nice game of rocket ball with Captain Future's team.

What's the matter with you space rats? Here I am, combing the mail bag as furiously as a Venusian marsh tiger claws fur, looking for a first-class gripe to print here—and all I find is orchids. What is this, a danged space mutiny? Well, here's a weak chirp from a ranking kiwi. My face is rocket-red as I okay it for the printer.

MORE FLOWERS

By D. W. Boggs

Salutations, Sarge! Through slightly hypermetropic eyes, I looked musingly upon THRILLING WONDER STORIES, Vol. XXI, No. 2, for December, 1941. A full-moon smile was on my face, and my rosy tongue lolled placidly from between my white, even choppers. The reason for this wondrous contentment was the cover. Yes, I thought that painting was GOOD. In fact, it was a thrilling wonder! May I respectfully inquire what you did to Artist Bergey? Imagine a TWS cover that accurately and beautifully portrays the description in the text. Only one thing is wrong: WHERE IS THE BEM? Honest, Sarge, that shouldn't happen to a scientifan! Seriously, this cover is a step—a running broad-jump—in the right direction.

Reluctantly leaving the cover, I glanced at the Contents Page. Then it was that briny tears began to shower down my cheeks. Pete Manx, whose return was foretold for this issue, had failed to appear. Whipping a bandanna from my pocket, I managed to proceed to the feature novel.

"Time Column" was not especially good. There wasn't a character in it that was interesting, unless it was the villainous King Skrymer. And a bunch of Russian thistles to Author Jameson for (1) making his Nazi agent a "double" for a famous inventor, and (2) the rather insipid love interest. I liked the novelty, though, of a time-travel tale in which the hero didn't get incredibly entangled in the "hopeless paradoxes" of the thing.

"Snapdragon"—immeasurably better than the first Botanical Detective story—was the No. One short. Gold's Martian yarn and Cummings' "Decadence" tie for next place. I am saving "Christmas on Mars" for a time when the Yuletide season is much nearer than it is now. Saaty did a fine illustration for the story, though.

The article, "Rule of Thumb," advanced few new facts—a rather elementary discussion. Articles are welcome, but let's have some meatier ones than this.

But perhaps the most important thing in the issue was the "feeler" put out for a THRILLING WONDER ANNUAL. Well, it's a fine idea, and I hope it works. Count me in, regardless of price. Naturally, we want a gigantic edition, reminiscent of the Quarterlies once so popular. I hope plans aren't cancelled due to a paper shortage or something.—2215 Benjamin Street N.E., Minneapolis, Minnesota.

So you liked the "feeler," did you, Pee-lot Boggs. Well, the old Sarge has received to date about a dozen such responses. I'm saving them up in a wad to fire at one time through a proton gun. I'd better hear more than that, or I won't be able to get even a blue ring out of the old ring pistol.

All you space rats are as slow on the trigger as the Jones boys have been in solving the mystery of the Pyramids in Binder's series.

Honestly, after giving my best years of astrogation to steering this craft, through the etheric barrage, I—I—get so mad I can see things that never came out of an Xeno jug. Here, read the next spasm!

PROMOTION FOR THE SARGE

By Edward C. Connor

Dear Lieutenant Saturn: No, you are not seeing things. I said Lieutenant. With the lately improved caliber of "The Reader Speaks," you deserve a promotion.

Uh—by the bye, Looie, here is some info for Central Illinois readers: I'm trying to organize a SCIENCE-FICTION FAN-CLUB in PEORIA & CENTRAL ILL. Anyone who wants to help organize this group, please drop me a short letter. Thank ya kindly.

I'd like to mention in closing that your recent cover pics still do not click like they should, Lieutenant. Also, I would like to put in a plea for more Finlay.—929 Butler Street, Peoria, Illinois.

Hello, what's this? Are you reading my mind—or over my shoulder—or am I reading your mail, Eddie? Lieutenant Saturn! What in the name of all the space devils does the old Sarge—aw, rocket sludge! Thanks, Pee-lot, but I haven't time enough to loaf to be a commissioned officer.

Best luck with the new fan club, and if you space monkeys should need a SFL chapter charter, you know what to do.

I thought I was getting Jovian Red Spots from too much praise. Here's one the chief pilot just handed me—and told me to print it!

SUNSHINE AND SHOWERS

By Francis D. Houghton

Dear Editor: Time marches on! Over thirteen years ago I started reading science

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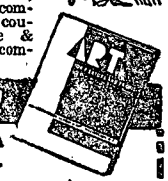

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fiction—much to the disgust of my parents, who thought that their son could be much better employed with his school books. However, being modern and fair-minded they did not prevent their offspring from indulging in this sort of literature, especially since his mind seemed bent into scientific channels.

At that time I was a fairly regular correspondent to the "Reader Speaks" department of the magazine "Wonder Stories"—then under the guiding hand of Hugo Gernsback. There were only two other science fiction publications of any great circulation at that time, and neither of them held a candle to my favorite "Wonder Stories."

Then, nine years ago I began my struggle to obtain a higher education, and in the ensuing years my studies and the difficulties of beginning a scientific career have taken me away from the reading of magazines almost completely. However, in the past few months I have sought relaxation from the strain of almost constant work, and after reading almost every available s-f magazine I have returned to the TWS fold. This magazine and its companions, STARTLING STORIES and CAPTAIN FUTURE are the best in the field in my opinion—and I've read them all. In all probability you will be hearing from me with some regularity from now on, so don't say I didn't warn you.

As a chemist and physicist by training and as a chemical engineer by vocation, I feel that I am qualified to pass some kind of judgment upon these magazines. Most of them have little or no scientific basis for their stories, a fact which is deplorable, and which removes most of them from the SCIENCE-fiction class.

TWS has good, even excellent stories, and most of the illustrations rate well up in the field, but being an old-timer, I sure do miss the regular Paul pictures. The old master still tops the field, and will continue to do so until the sun cools off, which time is some trillions of years off according to the best authorities. Wesso provides the best competition, but some of the others have a pretty good batting average. (All the foregoing is, of course, my own opinion, which is not always seconded by others.)

As you have noticed by now, this letter is a combination of criticism and praise, most of it in a more or less serious vein. It is for that reason that this letter was not addressed directly to Sergeant Saturn. However, I expect he is probably looking over your shoulder so I'll direct the rest of the letter to him, writing in words of one syllable so that he can understand it.

I don't have a very good opinion of the Sarge's puerile attempts at humor, but since his column is only a small part of an otherwise good magazine I suppose I will have to put up with it. There is always an insect in the unguent. A straight letters-from-the-readers column, with sensible comment, would be more appropriate. I must admit, however, that it attracts considerable comment from the readers, and really produces some literary germs (that "r" is NOT a misprint like some of my typing).

Here are my suggestions for an improved magazine—over and above those already mentioned: First, the word "Thrilling" should be taken out of the title. Isn't all science thrilling? It would dignify the magazine, though, in spite of the old space dog's efforts to the contrary. Second, get some decent covers, or at least let them stick to the facts of the story illustrated. In the October issue, I fail to find any incident in "Island in the Sky" where the hero and his girl-friend were in the arena together, shooting at irritated gorillas. Third, more Paul, that's all.

Somewhere above in this mass of misplaced type, I mentioned the fact that few stories of the science fiction class contain any real science, most of it being pseudo-science. I can just see the good Sergeant muttering, "Well, can you do any better?" The answer is that I don't know, but I'm going to find out the hard way.

I have in preparation a story, most of which is based on sound and established scientific facts and data, and which I will submit to the editor as my contribution to the Amateur Contest. It will be, no doubt, very amateurish, because there is quite a difference in writing engineering and research reports and turning

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out fiction that will please a large number of people. However, if they print the stuff that Saturn turns out, I guess that I will stand a chance of some sort.

Well, that will be all for now, but keep your weather eye open for me, the mad scientist of outer space, Sergeant, because I'm coming back with a letter addressed to you, personally, so you won't have to open the editor's mail to read it.—423 Cowles Avenue, Joliet, Ill.

How well I like this! A letter addressed to the chief, and the old Sarge can't answer it without violating the Queensbury-Post rules of something or other. So I just sit here in the chief astrogator's padded chair and finger the rocket buttons and think about padded cells for certain space-dizzy S.E.s—or whatever they call science troglodytes on Callistro.

I have to wait until Pee-lot Houghton sees the whites of my eyes and fires the opening salvo before I can give him the hot rocket, eh? Okay, okay, I'll wait. But, say, isn't there some sort of a big stone institution out there in Joliet where—never mind. Go on and run around loose. The old Sarge will rivet a collar on you if he has to track you into the fens of Neptune.

Here's another kiwi snapping at the heels of the old space dog. They come in pairs, eh? News, too—kiwis bite dog.

BUM VOYAGE

By Harry Jenkins

Dear Editor: How about the abolishment of Sgt. Saturn or at least, a revising of his "space" slangwidge?

October, 1941, THRILLING WONDER STORIES:

THE COVER: oh, gosh, give us back Brown, Bergey, anybody, but please Bergey to us, or us to Bergey. Where, oh, where, pray tell where, did the scene on the cover come from? The contents page says it's supposed to represent something from "Island In the Sky," but I read Wellman's story and I'll just be darned if I can find THAT scene. But—T. W. S. MUST have its monsters on the covers, whether they be bug-eyed or not.

THE STORIES: one good, one fair, and the rest indigestible. What an average! First, take "Island In the Sky"—another story of how and who will rule in the future, and the usual revolution of the "good" over the "bad." But I like stories where the hero always wins. Especially revolutions. And we've got gladiators, and beasts, and a heroine, and a villain—oh, an abundance of villains. However, "Island—" is the best story in the issue. I guess its length made it so, but maybe its the good writing in spots.

"The Voice" by Rocklynne dragged in spots. It presented another problem of time traveling and the story just wandered aimlessly around that problem. Rocklynne's usually good ending was absent. "Plants Must Grow" introduced ANOTHER killer plant. The attempt at humor in spots was a dismal failure, and so was the story.

Hot dawg!!! Space-Pirate Stories!!! "Moon Patrol" and "Hot Cargo" are both classics—beg pardon—classical flops. Brudy can write when he wants to, "Dosage" for example, but this time—ohhhh! Sorry, Dick, didn't care so much for "The Purple Bat." The humor in spots, WAS humor, the good-ol'-Wilson humor that made "Murder from Mars" such a swell story, but in others, it reminded me of "Transitory Island." It's good writing in spots, but in others, I just can't follow the story.

Please, Mr. Editor, let's have more humor, and let it be the Wilson type, and not some of that other drivel that goes under the title of supposed humor.

THE ARTWORK: Paul did an excellent job on "Island In the Sky." I especially liked the pic on p. 31. As for the Finlays, why, they were unbeatable. I admire any of the "cross-hatch-and-line" artists quite a bit more than

[*Turn page*]

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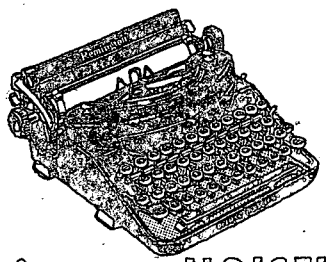

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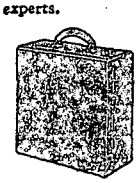

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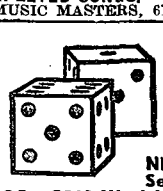

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I do the "black-and-white" ones. Finlay, Paul, Finlay, Paul, more Finlay, more Paul, more Finlay, more Paul, but I guess you get the idea. To be brutally frank, Morey and Marchioni are awful.

LETTER SECTION: oh garsh, what a plot we are being offered! Richard Baumler sure finds original ones. I think I've got one, Sgt. Saturn, an' it's THRILLING, it's STARTLING, it's new! Here 'tis. Some Martians invade Earth, then the President of the U. S. calls for help—and can't find any. Along comes Hecton Van Squinch Squinch, IV (don't forget the IV) and saves Earth with his super-super ray machine that spouts pink, purple, green and blue lights. (It also plays "Yankee Doodle Dandy" in accompaniment to Hector's victories over the Martians. But if any author uses my plot, he MUST use Martians. Aw, nuts, go call Hamilton.

Omigawd, next month—Pete Manx (I'm sick), Ray Cummings, (I'm dying), and a botanical detective, (I'm dead). Ray Cummings wrote one excellent story, "The Girl In the Golden Atom" and has stayed around to pound out voluminous tripe. I look forward with the utmost apprehension to his robot stories. As for Pete Manx, can't Kuttner see when he's gone far enuf?

I still think Friend's "Roar of the Rocket" is one of the best stories that has ever appeared in T. W. S., but on the other hand, I think "The Kid From Mars" the worst—no, I take that back and give the Burroughs boys that dishonor—story to appear in STARTLING to date. I KNOW Friend can write well, 'cause W. B. MacQueen says so. And Mac ought to know, for he's read a lot of his detective yarns, written under another name.

Please abandon the old policy as much as possible and turn to something else. Instead of using Morrison, Kummer, Cummings, et al, try Hubbard, de Camp, Heinlein, Gottesman, and others who can really WRITE. Enliven "Looking Forward," make it more for the fans, and not for the magazine. Innovate a fan mag review into THRILLING WONDER STORIES. Choose really intelligent letters for the letter section and cut out the "I'm just 13 years old and this is my first letter to your magazine or any magazine and I think your magazine is grand and if you cut out that terrible author Phineas P. Pipsqueek it would be perfect and if you don't print this letter I'll write you another one and you wouldn't want me to do that would you?"

Here's wishing you success. More power to ya!—Dixie Fantasy Federation, N. C.

That's a blast that ought to tear the hide off a Venusian saurocrok. But it really only scratches the old Sarge where I itch. So you, as well as other pee-lots, can't figure out the gal on the cover for "Island in the Sky." Maybe it was something the artist et. Or maybe he finally got around to opening that door for Frank Stockton—and out popped the lady. Maybe—but who cares? I got enough troubles and freaks to explain away without getting into a wrangle over the idiosyncrasies of artists. The artist says she was there, doesn't he? The author says she wasn't. Go tell it to Abbott and Costello; they'll settle it for you—good.

Well, the old space dog is staggering off, all right—to the next touch of painter's colic.

MORE ROCKET FUEL

By A. Francis Setti

For about two years I've been reading T. W. S. as soon as it reached the stands. Having also read a considerable number of back issues, I feel that it is time to let you know what I think of your magazine. First, however, let me give you a line-up of the stories in the October issue.

No. 1—"Island in the Sky"—in first place chiefly because of its length. As for the story, it was pretty weak, but had a new idea—the Airmen. This was about the first time I have

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been let down by Mr. Wellman, but not too hard.

No. 2—"The Voice"—Ross really has a swell idea in this tale, which just screams for a sequel.

No. 3—"The Purple Bat"—Dick Wilson sure can dig up humor, which is why this story deserves third, if not second, place. More of him, PLEASE.

No. 4—"Hot Cargo"—this yarn wasn't really bad, but Marchioni's illustration sends an 'orrible odor in the direction of ye faithe-full reader. Please, Sarge, can the guy! His "Buck Rogers-looking" illustrations are PU-TRID, to say the least!

As for Vic Rousseau's short, "Moon Patrol," we hold our nose and manage to grunt out nasally, "Ugh!"

Now we come to the question of great importance: What happened to Long? Exploding Diamond Plants! Wheeeww! Frank usually rights his wrongs by writing better stories after the readers complain. I do hope he does this time!

Yours truly now takes a step in a different direction: the artists. First, the cover. It was a sad, sad day for the world of science fiction when Belarski was hired by yon editor. I will quote a three-line theme which is printed on the contents page. "ON THE COVER: The cover painting by Rudolph Belarski DEPICTS A SCENE from Manly Wade Wellman's Novel, "Island in the Sky." Need I say more?

Another sizzle-ray in Belarski's direction. Namely, the sky. On not one of his or Bergey's covers appears a natural-color sky. I hereby form the SFNCSOTWSC (Society For Natural Color Skies on THRILLING WONDER STORIES Covers).

Now come some IMPERATIVE demands. 1. Get rid of Marchioni. 2. Let's have more Finlay and Paul. 3. Get more yarns by Wellman, Rocklynne, Bloch, Wilson, and some of the old favorites. If other of you fans support me on this, say so in your letter to the Sarge. Okay?

Now to attend to this matter of Sergeant Saturn. He's okay by me, and adds a bit of good humor to the battleground called, "The Reader Speaks." Keep it up, Sarge! I like your pterodactylic chatter, for I am due on Eros in a few hours for a cup of tea with the Service Commander in my mansion there.—120 West 63rd St., N. Y. C.

All I have to offer besides my eloquent silence is to point to my answer to Kiwi Jenkins, just above. And, if you don't mind, the old space dog had rather not hear any more about that unhappy October cover. You should see the wealth of detail that goes on here to get TWS between covers for you space harpies. Then you should wonder why there aren't more slip-ups. As Gipsy Rose Lee would say, "You don't know from nothing."

I'll bet that gal could sling some salty space lingo. You know—G-String Murders Lee, that's the gal.

Cut stern rockets and decelerate now for a space flash from Illinois.

BATTING A THOUSAND

By E. Earl Bielfeldt

This time it's THRILLING WONDER STORIES that I want for a year. Enclosed you will find a money order for a subscription beginning with the December issue.

That October issue! First was "Island in the Sky." Wellman always was one of my favorite SF authors. And if that isn't enough, you give us something new: "Plants Must Grow." Carstairs is one we must see more in TWS. But definitely. "Moon Patrol" was a diller. What an ending! I think anyone in that position would do the same, though. A sore tooth hurts.

"The Voice." This is a new angle on time travel. Very good, too. But I'd hate to wait years to hear what someone is saying and then find out that I was being bawled out!

"Hot Cargo." Cook Catches Crooks With

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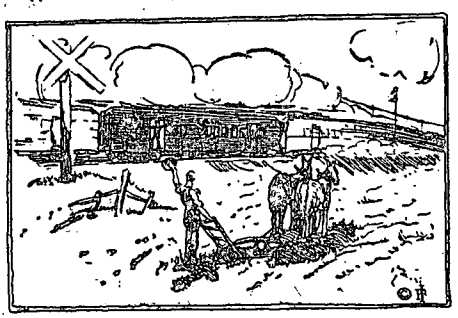

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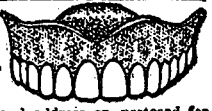

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Weightless Water could very well have been the headline to that story in the New York Interplanet. It was a good story, but formula.

"The Purple Bat." More formula. This was not bad, not good, just average. But then, they can't all be good.

The article by Willy Ley is very informative and clever. I hope the authors take it to heart, although I have seen very little about food pellets lately. I don't think, either, that I'd care much for a "'kind of porridge with some solid particles in it. . . .'" It sounds messy.

To sum up. Four good and one pretty good short; a very good novel and an entertaining article. That isn't so bad, is it, Sarge?

Report finished.—Maple and Cherry Lanes, Thornton, Ill.

Nope, Pee-lot Bielfeldt, I'd say that isn't so bad. But I can't get all you hammerheads to agree on anything at the same time. If you did I'd know you were all space-sick, anyway. And that would make the old Sarge sick—on Xeno, I think.

I've got another letter here from a mutinous spaceteer who wants the old Sarge fired and a "man of *mature* mind who can write *interesting* comments" placed in the astrogator's seat. I'm not going to run it in this department this issue because he's already got one ethergram herein, and we don't even let authors ride double on the same ticket. So why should a space rat be twins? Jumping Jelloauds of Jupiter, sometimes one is too much.

So the old Sarge can't take a ray-gun shot at this space imp. 'Twouldn't be fair. But I ask all you chattering kiwis, how in Pluto can the old Sarge talk space lingo to most of you junior pee-lots, pig-Latin to you swamp-apes and post-graduate technical palaver to the few spatial intelligensia drifting around in the void—all at the same time?

I swear, I wish I was back on Saturn on that old space run to Neptune. I had a soft berth cleaning out fused rocket tubes in space—and I didn't know it. I mind the night six of us from the engine-rooms hit that rocketeers' bar in Xllarus, Neptune. There was the most stunning cutie singing there. She was from the Earth colony on —but, here! Never mind the snivels or the personal reminiscences. The old Sarge has a space chore to do—one more charge to fire out of the hindmost rocket.

A NEW FAN CLUB

By Bruce L. Hanson

The rocket blast sounds the call to Minnesota. At present I am trying to found the/a "Gopher Fantasy League" with the express purpose of holding a Stf Convention in Min-

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nesota in 1943. Will you kindly print this announcement in your letter columns?

Is Minnesota inhabited by fans or mice? In 1943 we can (and I think will) hold a sci-con in Minnesota. The Gopher Fans are capable, if well organized, of as good a Con as Colorado or Chicago turned out. As the state is rather large, it might take the two years we will have to wait to get a Con organized.

All in favor of a "Gopher Fantasy League" in Minnesota write me at once and in 1943 we'll all be in the state where the Con is held.

If you want to have the time of your life we'll all pitch in and work on it.—Hanson's Cottages, Hackensack, Minn.

And that's that for this voyage. Minnesota, by the way, is called the State of Ten Thousand Lakes. Why, it has more water-holes than a Venusian marshland. And lots better.

Anyway, you kiwis shove your rocket fliers around as you see fit and leave the old Sarge be until next issue. I gotta date with an Xeno jug.

Happy spacings to you—you crazy space hounds!

—SERGEANT SATURN.

Answers to Measure Test

(See page 92)

1. 3 inches
2. 4 inches
3. 6 inches
4. 18 inches
5. 21.8 inches
6. 2½ feet
7. 45 inches
8. 2¼ inches
9. 1 quarter (9 inches)
10. 1 yard
11. ⅓ inch
12. 39.37 inches

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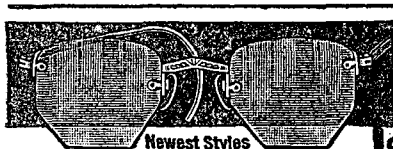

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LOOKING FORWARD

(Continued from page 10)

you ever saw. If you are a collector and don't want to mutilate the cover, just send twenty-five cents in coin or stamps of small denomination, and we'll send you the emblem. (Sergeant Saturn tells me that quite a few of the regular readers would gladly donate a strip of the cover—the way they tear them to pieces in the Sarge's agony column. Yes—just try to get a copy of the magazine away from them!)

AMATEUR STORY CONTEST

Well, you read a prize winner in this issue. How did you like it? No—don't start to tell me. Write in and unburden yourself to Sergeant Saturn. He handles all the correspondence, and he really isn't at all the dizzy hot-air-conditioned unit he seems to be.

Next issue we are printing the second prize winner—TWISTED DIMENSIONS, by Daniel A. Alexander. We think you'll like it.

Since the awarding of those prizes and honorable mentions two or three new stories worthy of this high rocket class have come in. Maybe next issue we'll be able to announce a new set of winners. That depends on how many of your amateurs respond and how well you write. Remember, the contest runs constantly.

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on one side of standard white typewriter paper, address it to AMATEUR STORY CONTEST EDITOR, THRILLING WONDER STORIES, 10 East 40th Street, New York, N. Y., enclose return postage, and mail it in. The only real stipulation is that you have never sold a story before.

If your story has merit and cleverness of idea, the chances are that the lack of professional touches will be overlooked. Believe me when I say we are genuinely and warmly anxious to discover new writers.

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SCIENCE FICTION AT ITS BEST

Before I let the printer lock this form on me and deny me further utterance, let me remind you of THRILLING WONDER STORIES' two companion magazines—STARTLING STORIES and CAPTAIN FUTURE. Perhaps you know all about this trilogy of science fiction already. If not, you are overlooking some of the finest reading of this modern and up-to-date type on the newsstands. You should read all three magazines just to enjoy the exchange of barrages between Sergeant Saturn and the avid fans.

The Sergeant tells me that we have the three best publications in the science fiction field. He ought to know; he publishes the worst letters about us that come in, and he says he draws his conclusions from the readers. Which ought to be conclusive.

Scienti-factually yours,
THE EDITOR.

THIS IS HELL

(Continued from page 114)

quake debacle. Close-up flashes of Arnold with the heroine could be made later and dubbed in. For the show must go on. At a cost of fifty thousand dollars per day, it had to!

Marcia Montayne—in private life, Mrs. Sam Dozment—was poised in the foreground at the bottom of the wide sweep of temple steps, as the soundproofed cameras started grinding. The first blast of the silent explosive, trontol-235, had just been set off by the mining technician.

Dozment ceased his restless pacing to observe the result of this carefully planned scene. His worry and annoyance over the absent Arnold took second place in his mind. His wife was out there in the forefront of the throng, and he didn't want to see her injured in any chance accident.

[Turn page]

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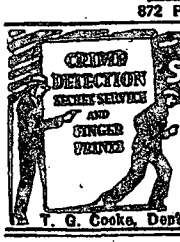

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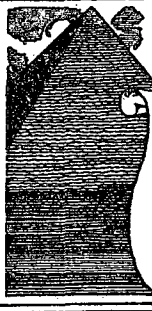

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It happened just at the moment when the first crack appeared in the temple wall. Under the direction of assistant directors, the mob had begun acting as a crazed mob should. Suddenly the roar of a caterpillar truck rose in a crescendo of sound from the western edge of the desert.

Swinging wildly around the temple set, slithering madly and raising a shower of sand, narrowly missing the outermost camera lines as it drove into the camp, came the truck of the Nordiff archeological unit.

The machine screeched to a halt at the end of the street behind the battery of cameras just as Dozment, the chief director and half a dozen technicians charged toward the newcomer with expressions akin to murder. From the truck cab scrambled the frantic figure of a frightened man, looking back over his shoulder and gesticulating wildly.

"Nordiff!" exclaimed Dozment, springing forward and grasping the archeologist by the shoulders. "Where's Arthur Arnold? Have you seen him?"

"Help!" babbled Nordiff. "I've got to have help. Get out your atomic guns! Your explosive bombs! We found a devil in that crypt. He killed Gilbraith and Arnold—and he's following me! A giant monster. We must save those priceless relics in the crypt, but we must destroy the fiend first. Arnold warned me, but I'll swear I didn't—"

"Get a grip on yourself, man!" Dozment snapped, shaking the hysterical scientist roughly. "And calm down. The sound track will pick up your voice. What are you saying? Come away from this area before you ruin this take! You almost ran that truck into one of the camera angles."

The second charge of trontol-235 let go. There were screams and shouts and the rising roar of rending, tottering walls. Nordiff, his eyes glittering wildly, jerked free from the chief technician's grasp and pointed in frenzy beyond the top of the crumbling white parapets.

"I tell you there's no danger of a silicosis plague!" he raved. "Gilbraith was just unlucky. Arnold was a superstitious fool. They had all those childish superstitions back in the

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nineteenth and twentieth centuries on Earth, when they opened Egyptian crypts.

"But that hundred-foot devil is pursuing me across the desert to prevent me from taking my archeological finds back to Earth. Don't stand here like statues! Get out your deadliest weapons, I tell you! We've got to destroy—"

Nordiff broke off as a more terrible crescendo of cries arose from the throng before the disintegrating temple. His face went dead white above his beard, and he shrieked in pure terror.

Dozment twisted sharply to look. And his own blood seemed to congeal in his veins. Just behind the crumbling temple walls, taloned hands gripping the two highest parapets, loomed the gigantic head of a red fiend. A diabolical expression was on the monster's face as he peered over the walls and helped to shatter the crashing, toppling steel-and-concrete shell.

Frantic little human figures were futilely shooting arrows and hurling javelins at that hideous head. Others were fleeing in a veritable stampede across the plaza. The carefully figured and rehearsed spectacle was turning into pandemonium. The mining engineer at his switchboard took one horrified look and slapped down all his remaining contact switches at once.

Trontol-235 exploded all around the horrible colossus—and the thing remained undisturbed! The dread apparition took no notice of anything. He seemed to be searching for one particular little human figure—like a giant breaking into an anthill.

Then his eyes found the little group around Dr. Nordiff—and his mouth opened in a vast but silent laugh of exultation.

PANIC? The crowd went stark mad. Nordiff, shrieking in a shrill voice that hurt the eardrums, broke through the ring of men around him and fled like a madman toward the outlying desert.

In the midst of his own unreasoning terror, Sam Dozment still found time to think of two things—his wife,

[*Turn page*]

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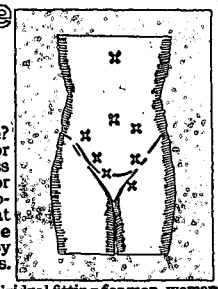

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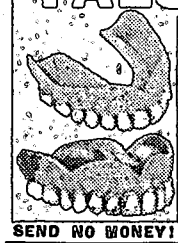

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Marcia, and the odd fact that the satanic colossus had brown eyes astonishingly like those of Arthur Arnold.

The automatic cameras and sound equipment continued functioning, but the crews had now deserted to join the fleeing mob. Trained for almost any emergency, this was one thing for which they were unprepared.

If trontol-235 wouldn't kill that monster from Hades, no puny explosive bullets or paralysis rays could injure him. This was no creature native to Mars. This was a fiend from the nethermost pit!

Dozment, shaken to his very soul, saw Marcia slump to her hands and knees beside the prone figure of a character actor, in the very path of the stampeding mob.

Without hope of any success, but because he must do something, the chief technician leaped for the control panel of the artificial lightning machine, which he had built to crash a million volts of electricity across the sky as a grand finale to the fall of Atlantis.

Throwing and flipping relay after relay of switches into contact, Dozment grasped the heavy rubberoid handles of the great million-volt cannon and swung it on its pivotal base. He aimed it at the great red, hairless head of the demon just as the monster reared erect and reached out one mighty, tenuous arm.

Monstrous fingers curled like steel traps about the body of the fleeing archeologist just as Dozment, uttering an incoherent prayer, tripped the switch that unleashed the terrific bolt of lightning.

The semi-gaseous demon took the charge squarely in the chest. There was a tremendous flash of lurid light which was blinding in intensity, a detonation which rivaled the explosion of the magazine of a twentieth century battleship. Suddenly the red fiend was no more. He had simply vanished, dissipated by that shattering electric bolt.

As soon as he could see and move again, Sam Dozment staggered out onto the paved area before the ruined temple and gathered his wife in his arms. Save for scratches and bruises, she was uninjured. Sobbing hysterically, she clung to him.

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Later, when a semblance of order was restored and the company physician and his staff of assistants were busily caring for the casualties, the body of Dr. Winston Nordiff was picked up out there in the desert. The archeologist was in actual truth stone dead, his entire torso mysteriously petrified into a siliciferous rock.

They buried him there in the desert.

The missing Arnold was never found. That the great actor had played his finest and noblest rôle before the purring Tru-Depth cameras, saving all mankind from a terrible disaster, winning release for himself at the hands of Sam Dozment, was never known.

For had Dr. Nordiff succeeded in destroying the monster, he would have returned to the crypt and removed its deadly furnishings to Earth. The dread silicosis plague would have decimated the population.

As the years ran their course, some twenty miles from the ruins of Atlantis, out in the desolate wastes of the Guba-Guba Plains, the drifting red sands of the Martian desert slowly recovered and reclaimed the pit of Hades.

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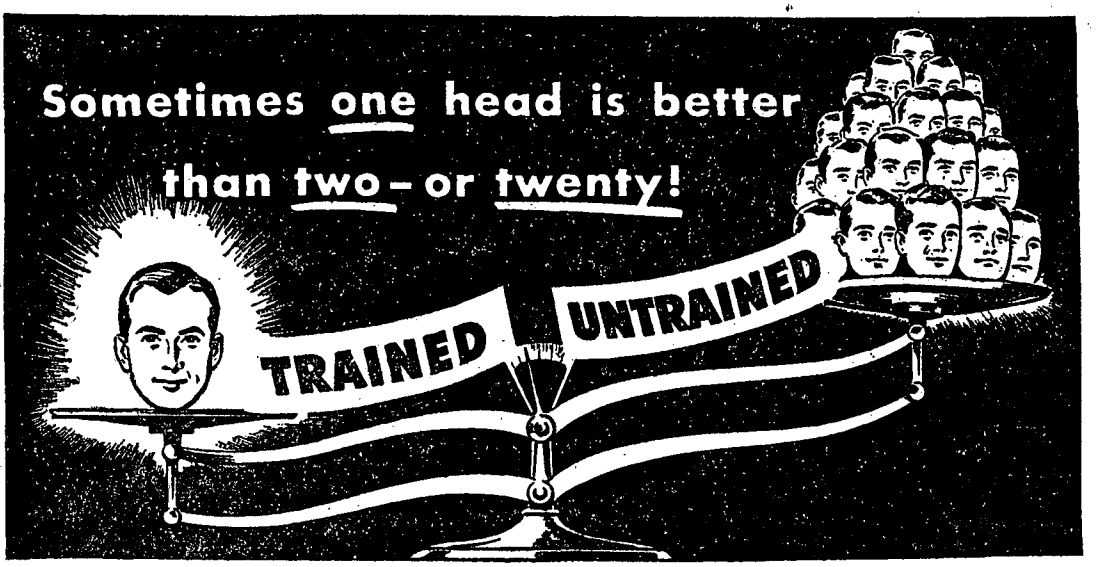

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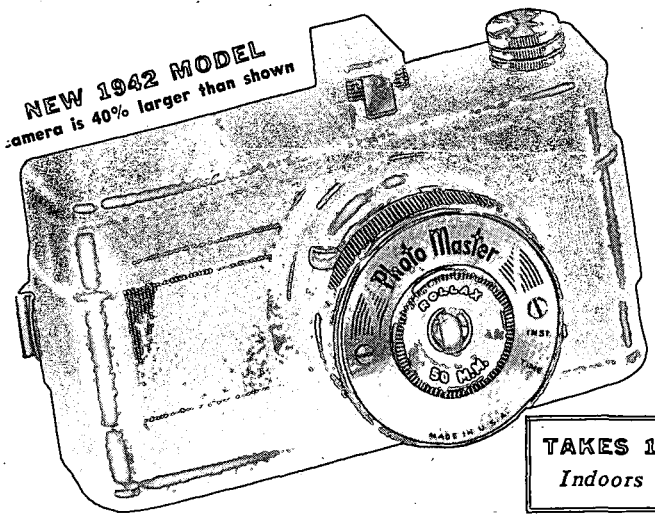

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- **Takes 16 Pictures At A Cost of About 1¢ Apiece.**
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Economical to Operate — This Camera Takes 16 Pictures on Any Low-Priced Standard Roll of Film!

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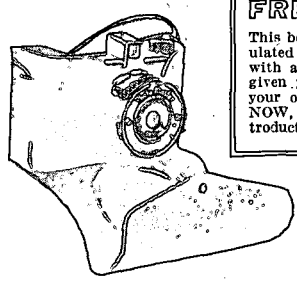

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